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APRIL, 1908



THE WORLD'S GREATEST BUILDING PAPER



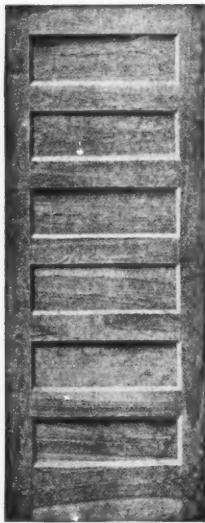
The Madisonville Lumber Co., *Cincinnati, Ohio*

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From **FACTORY**
DIRECT
to YOU



SCAMOZZI ITALIAN
8" Column, 6½" Neck
\$0.70
10" Column, 8½" Neck
\$0.95



No. 377
All sizes in stock in Oak and Birch.
Birch, 2x8.....\$2.75
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No. 1180
All sizes in stock in Oak and Birch.

All of our doors are guaranteed. Try 'Em



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All sizes in stock in Oak and Birch.



No. 12 No. 28

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**QUALITY
FIRST
AND
PRICES
TO
SUIT**

Doors, Sash, Interior
Trim, Stair Work,
Mouldings. In

**Birch
Oak
Southern
Mahogany
Yellow Pine
AND
White Pine**

**Columns
Composition
Caps
AND
Ornaments**

**Window Glass
Mirrors
Paints, Oils
Varnish
Putty, Etc.**

Roofing Paper

Let Us

Have Your

Inquiries

Before

You

Buy

A

Scraper,

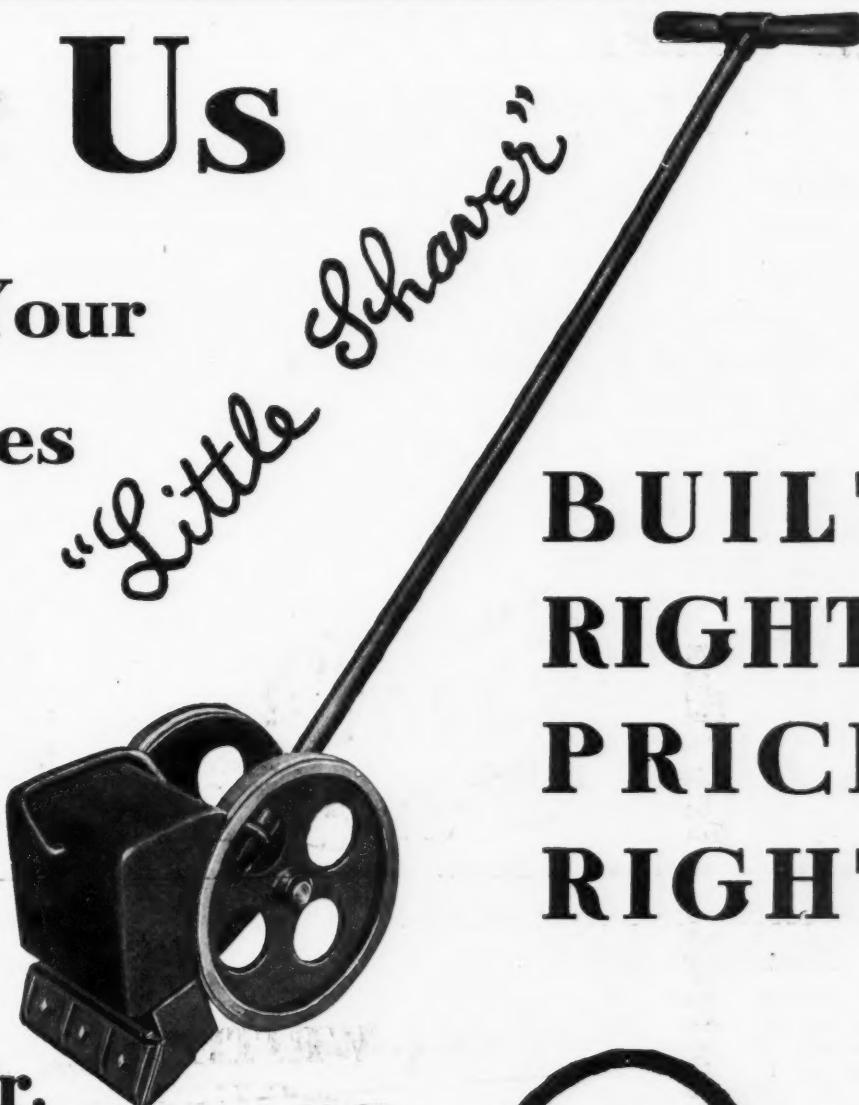
for Our

Price is Right

And We Can

Save You Money

BUILT
RIGHT,
PRICE
RIGHT



*The Weight
is where
it should be,
ON THE KNIFE
and not
on the
Handle*

K. K. 21 / K. K. 1085-L

Contractors Supply & Equipment Co.
Old Colony Building, : : : : Chicago

JUDGED UPON MERIT

and accomplishments by PRACTICAL CARPENTERS and BUILDERS (who by the way are the only men capable of passing judgment on machines of the nature here advertised) the FACT still remains that the ACME MACHINES constitute the BEST EQUIPMENT for floor scraping. The opinions of MEN who KNOW what they are talking about and who render judgment on RESULTS and ACHIEVEMENTS, are worth more consideration than the decision (?) of a couple of inexperienced and impractical men in this line. It takes a CONTRACTOR or BUILDER to know what FEATURES a floor scraping outfit must possess in order to meet all requirements, for he is the man who handles the machine, and A SINGLE EXPRESSION from him is worth HUNDREDS of decisions of impractical persons. Note what a few users of the ACME MACHINES have to say, for they are OPINIONS based upon FACTS as THEY ARE. None of these men are in any way interested in the sale of my machines, nor stockholders in the company, so their opinions are based entirely upon the merits of same.

HOOD & TULLGREN
Architects and Builders

Mr. Jos. Miotke, City.
Milwaukee, Wis.

Dear Sir: Some time ago we purchased from you the Acme Floor Scraper, and we are pleased to inform you that we are entirely satisfied with the work it does, and the amount of labor it saves.

Your sharpening device is a strong addition to your scraper, for it overcomes the difficulty we have had in getting the right edge on the knife. With your device we can sharpen a knife in a very few minutes.

Your machines should meet with great success, for they accomplish the purpose for which they are intended. Respectfully,

Hood & Tullgren

JEROME MILLER
Contractor

Oshkosh, Wis.
Jos. Miotke, Milwaukee, Wis.

Dear Sir: The Acme Floor Scraper and Blade Sharpener purchased from you some weeks ago, have by this time paid for themselves in the saving of labor on several jobs of floor scraping which I have had.

Working with your floor scraper my men say is a pleasure. They do not complain of lame backs and learn to operate the machine after a single trial. I would not be without the outfit now that I have used it and know its worth to me.

Jerome Miller

JOHNSON, RIDDLE & CHILD
Contractors and Builders

Mr. Jos. Miotke
Northfield, Minn.

Dear Sir: Enclosed find draft in full for Floor Scraper sent to us. Same is proving satisfactory.

Please state us price on extra sets of blades. Yours truly,

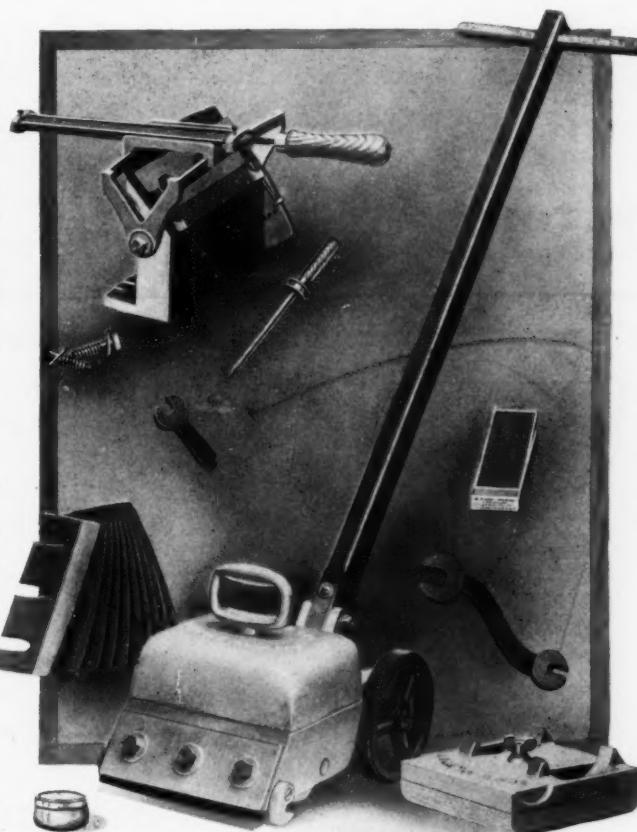
Johnson & Child

CHAS. SPAETH
Carpenter, Builder and
General Contractor

Mr. Jos. Miotke
New York, N. Y.

Dear Sir: Your Floor Scraper is O. K., works better than I expected. Inclosed is a certified check for the amount due you.

Yours respectfully,
Chas. Spaeth



CADENHEAD & MORAW CO.
Carpenters, Builders and
General Contractors

Chicago, Ill.
Mr. Jos. Miotke, Milwaukee, Wis.

Dear Sir: We purchased from your representative, one of your Acme Floor Scrapers and Blade Sharpener, and find it is all he represented it to be, as to the work it does, and the amount of labor it saves. Your machine is a big improvement on all other machines we have tried and seen.

Wishing you success with the Acme, we are

Yours very truly,
Cadenhead & Moraw Co.

GENERAL CONSTRUCTION
COMPANY

Milwaukee, Wis.
Mr. Jos. Miotke, City

Dear Sir: The Acme Floor Scraper purchased from you some time ago has proven entirely satisfactory, and the results obtained by using the same are all that you claim them to be.

We are especially pleased with the sharpening device, for we can put just the proper edge on the knife in a very few minutes.

Your machines certainly fill a long felt want in the building line and are a great labor saver.

Respectfully,
General Construction Co.
H. S. Pelton

B. F. BROWN
Contractor and Builder

Pittsburg, Pa.
Dear Sir: I beg to say that the Acme Floor Scraper which I recently purchased has worked very satisfactorily for us. We can figure that the machine paid its cost on the first job we used it on, besides the saving in time. Very truly yours,

B. F. Brown

Beaver City, Neb.

Dear Sir: I received your floor scraper in good condition. It is a fine worker. It is all that I expected. Enclosed please find check for same.

Claud A. Comba

Mr. Jos. Miotke
Atlanta, Ill.

Dear Sir: Enclosed you will find draft in full for floor scraper which has given perfect satisfaction to date.

Yours truly,
J. T. Camerer

Upon request I will mail to you an illustrated booklet which describes in detail the Acme Floor Scraping Machine and equipment

Jos. Miotke 247 LAKE STREET Milwaukee, U.S.A.

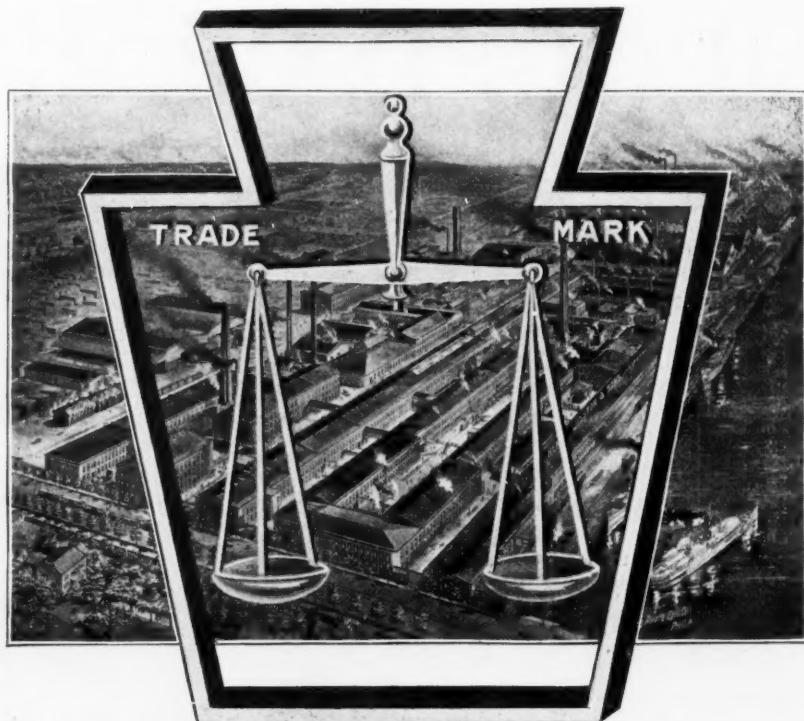
DISSTON SAWS

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DISSTON SAW WORKS
AND BY THE
DISSTON METHOD
OF MANUFACTURING.
THIS BRAND
ON SAWS AND TOOLS

Will continue to be recognized in the future as in the past

SIXTY-EIGHT YEARS
as a guarantee of HIGHEST
QUALITY and EFFICIENCY.

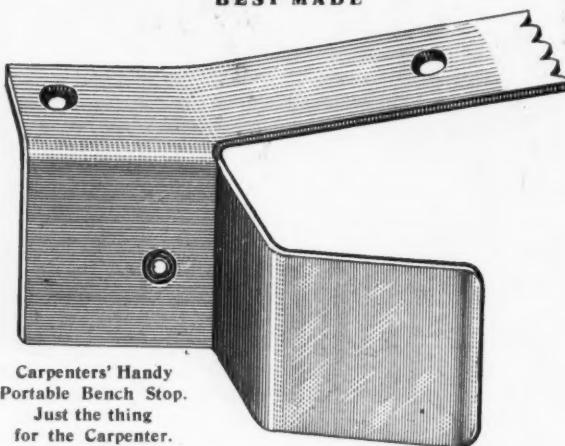
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Keystone Saw, Tool, Steel & File Works



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Brick Chisels,
Cork Floats,
Canvas Tool Bags,
Beading Tools.



Carpenters' Handy
Portable Bench Stop.
Just the thing
for the Carpenter.

Steel Sidewalk Edgers
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All Sizes.

Finishing and Brown-
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Made of the best quality tool steel, $\frac{3}{4}$ in. Octagon,
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Get Prices and Catalogue for the Asking

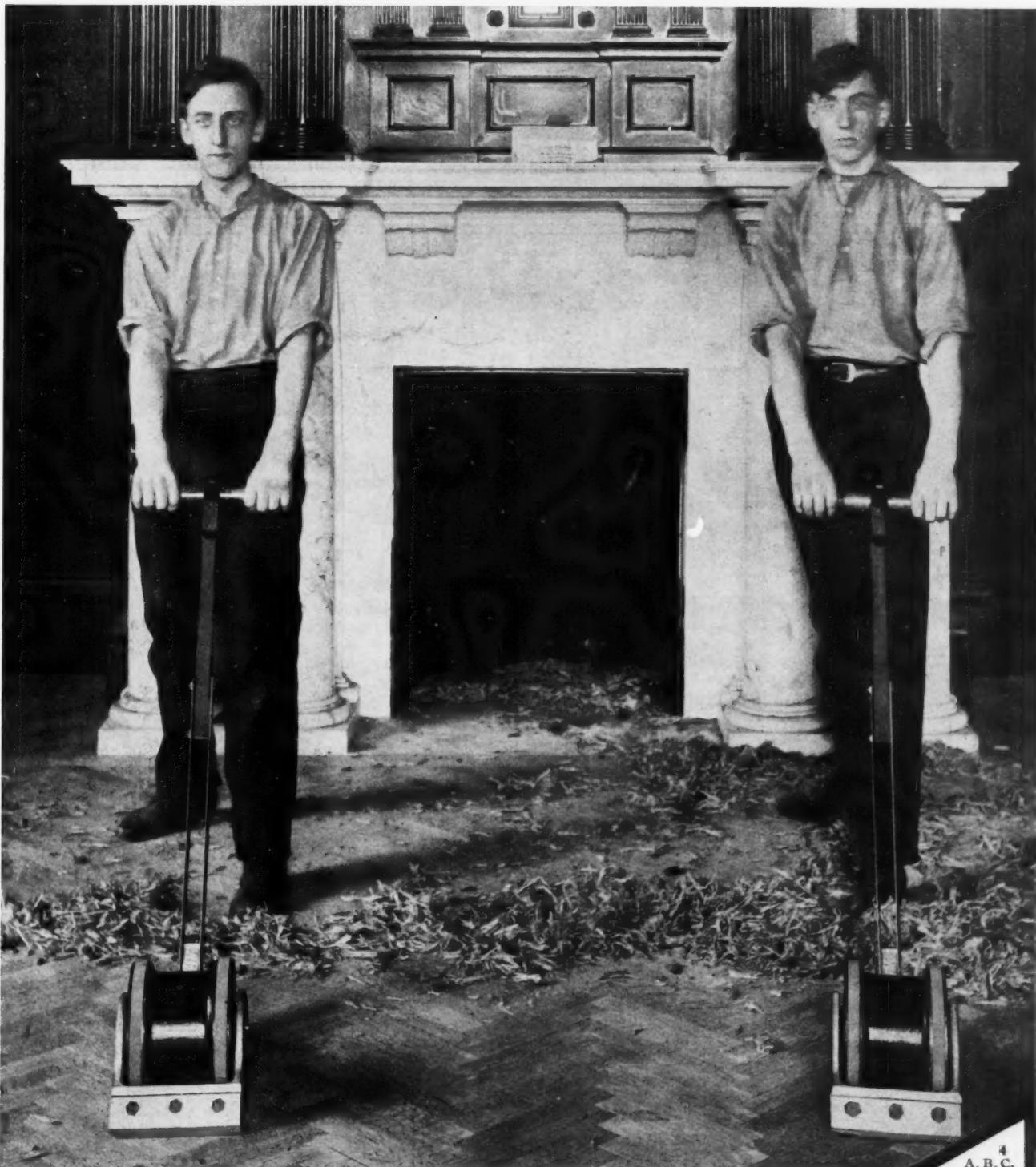
MARSHALLTOWN TROWEL CO.

Marshalltown, Iowa

U. S. A.

"LITTLE GIANT" FLOOR SCRAPER

Sent Free On Trial



Finishing Parquet Floors with a "Little Giant" Floor Scraper

WE DO NOT REQUIRE YOU TO DEPOSIT ANY MONEY
 WE PAY THE FREIGHT BOTH WAYS IF NOT SATISFACTORY

HURLEY MACHINE COMPANY : : Chicago

General Office and Works: 155 So. Jefferson Street

Branches: NEW YORK and SAN FRANCISCO

A. B. C.

Send particulars of your Free trial offer on the "Little Giant" Floor Scraper.

Name.....

Town.....

State.....



The American Floor Surfacing Machine

Does the Work of 20 Men

BETTER

QUICKER

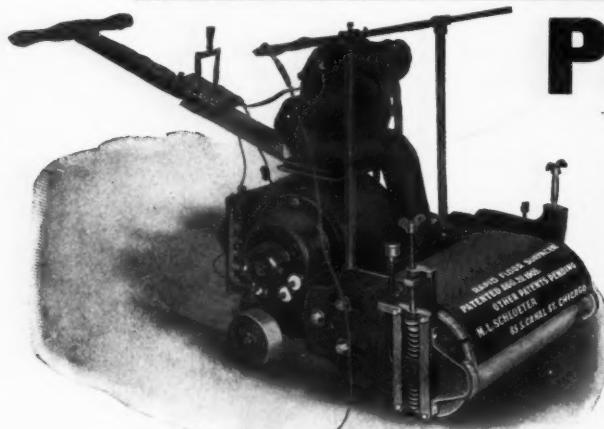
CHEAPER

The only machine whose work is specified by architects and meets the requirements of contractors and owners, giving a level, smooth, sand-papered finish, that harmonizes with the balance of the interior wood work.

It has surfaced and polished millions of square feet on every kind of floors, from common pine to the finest parquetry, from bowling alleys to sky scrapers. It is self-propelling, no pushing or pulling, no blades to dull or sharpen. Used and indorsed by leading contractors everywhere. Big money in floor surfacing as a business, one machine earned over \$1850.00 in seven weeks. Guaranteed and sold on its merits.

Write for Booklet and Particulars

**The American Floor Surfacing Machine Company
TOLEDO, OHIO**



Perfect Results

Are Easily Obtained by Leasing the
SCHLUETER RAPID FLOOR SURFACER

This machine is built on the only correct principle. It is guaranteed to be **THE BEST** machine with which to produce an even, smooth surface on any kind of wood floor, old or new, hard or soft and in all buildings; Residences, Stores, Factories, Bowling Alleys, Roller Skating Rinks, Reception and Dance Halls, Etc. **THE SCHLUETER** will remove all joints or warped edges, and leave the floor perfectly smooth. It will remove shellac, varnish, oil, wax, lime stains or the "muck" from skate wheels in a most satisfactory manner.

Profits for Contractors

Type "B" Machine 18x8 In. Roller
Type "C" Machine 12x8 In. Roller

The contractor leasing a **Schlueter Rapid Floor Surfer** and advertising the fact that he is prepared to do perfect work will soon have all the work he can do. We can prove to any contractor that the Schlueter machine will easily earn a net profit of not less than \$10 a day when in operation.

Sand Paper the Only Perfect Way

The **SCHLUETER RAPID FLOOR SURFACER** is so constructed that a roller, to which a sheet of sandpaper is quickly adjusted, is brought in contact with the floor surface while revolving at a speed of **600 revolutions a minute**. It is guaranteed to do the work cheaper and smoother than any other machine or method. This machine will surface from one to two thousand square feet in eight hours. Cost of sandpaper and electric power from \$1.00 to \$2.00.

What One Contractor Says

TO WHOM IT MAY CONCERN: I am a floor contractor, have been in the business many years and I lay floors in the finest of residences, and therefore require a fine finish. Now to overcome the hardest work in the business, which is scraping the floors, I have been looking for a machine to do the work. I have tried all kinds of scrapers and floor surfacing machines but have not found one which would do the work satisfactorily, until Mr. Schlueter sent me a machine on two days trial which I found to do the work in the quickest and most satisfactory manner. So I cheerfully recommend the Schlueter Rapid Surfer to any one, which I know will pay for itself in a very short time. I am yours truly,

ELF F. JONES, Contractor and Builder.

FREE Fine illustrated booklet containing full information sent free to contractors.

M. L. SCHLUETER 61 South Canal Street
CHICAGO

Patented
in U.S.
and
Canada.
Last U.S.
patent
allowed
Sept. 25,
1907



Edge Roller At attachment
Interchangeable to either side
of machine. Works close
to baseboard.

Push Here and It's Filled

WELTY'S NEW IDEA
THE W. A. WELTY CO.
WATERLOO, IOWA

WELTY'S NO LEAK PEN
WATERLOO, IOWA

THE WILLIAM A. WELTY COMPANY, Waterloo, Iowa, U. S. A.

Weltys Self-Filling and No-Leak Fountain Pen
Realizing the demand for a reliable self-filling pen, we have perfected a device that surpasses all others. No questionable parts—each pen fitted with Weltys patented feeder, a perfect ink and air controller—made in black or mottled holders.
To those who desire a pen that can be carried in any position we offer Weltys No-Leak Pens as the most simple and satisfactory on the market. One turn of the thumb piece opens the valve and one turn closes it. Can be carried in vest or trousers pocket without leaking. All our pens are high grade and warranted indefinitely. Either of the above pens will be sent prepaid upon receipt of \$2.50. Catalog free. Ask about our Clinch Safety Clips.



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for
Catalogue G

We Manufacture WOOD BORING and HOLLOW MORTISING TOOLS
FOREST CITY BIT AND TOOL COMPANY - - - - - **ROCKFORD ILLINOIS**

ACKERMANN'S RAPID FLOOR SCRAPER

Patented by J. B. Ackermann, June, 1907

THIS MACHINE WILL DO
MORE
BETTER
EASIER
WORK

Than any other
Scraper on the
market.

Weight
120 lbs.

**The Machine is
FREE** if the above
statement is not
strictly true.
(See offer
Below.)

Knife Advantages of the "Rapid"

By means of a simple eccentric device, the knife blades of the "Rapid" can be **instantly** moved or set at any angle, thus securing a "**drawing cut.**"

No floor scraper can be a success that does not bring the knife blade across the floor surface with a natural, **hand-like** movement. The "Rapid" does this perfectly. Any size blade up to $4\frac{1}{2} \times 8$ inches can be used on this machine.

Exclusive Knife-Sharpening Feature

By simply reversing the position of the machine (turning it over) it forms a vise, the blade being brought into a position ready to sharpen, **without removing** the machine. This saves time, and time is money. The operator protects the machine with his work.

Our Special Guarantee Offer

We will ship a **Rapid Floor Scraper**, charges prepaid, subject to use **FREE** for three days, by any responsible person. If you are then satisfied the machine is all we claim for it you can purchase it, if not we will have the machine returned at our expense. Further; if, after you purchase this machine, you find that, at any time under equal conditions it will not do "**More**" "**Better**" and "**Easier**" work in a given number of hours than any other floor scraper, we will return your money and you can keep the machine free of cost. This is a straight offer, without any strings to it, made to anyone desiring to secure the best floor scraper made without risking their money until **THEY KNOW** what they are buying. We refer to the **State Bank of Michigan**, Grand Rapids, Mich., as to our guarantee and responsibility.

J. B. ACKERMANN & CO., Sole Manufacturers Board of Trade Bldg., 97-99 Pearl St., GRAND RAPIDS, MICH.

I contemplate purchasing a floor scraper and would like to see yours operate before agreeing to buy it. Please send me full details covering your manufacturer's guarantee and special terms.

Name
Town
State



This Brush operates automatically, as the cutting machine to vibrate or dull the cutting blade. The brush sweeps away the shavings, grit, dust and other obstructions.

Patent Allowed Nov. 1907



Cut
Showing
Machine
In Reverse
Position Ready
to Sharpen the
Knife-Blade

TOLES' RAPID ACTING VISE FOR WOODWORKERS

A Guaranteed Time Saver

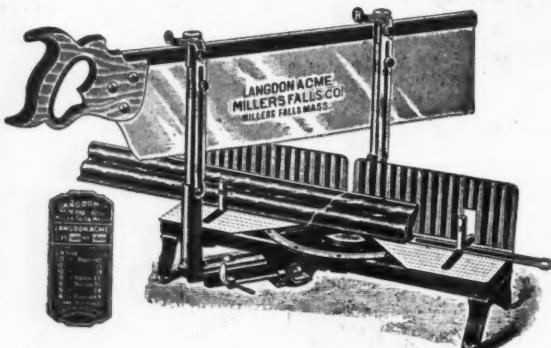
Piece-Workers say they save the price of their
vise in a month's time

YOUR TIME IS MONEY—SAVE IT!

It takes 24 turns of the ordinary wood screw, $\frac{1}{4}$ -inch pitch, to open a vise 12 inches, and 24 turns more to close it. We advise any mechanic while he is resting, to time the other fellow while he is doing this, and also figure in the time it takes to adjust the bolt at the bottom of the vise to keep the jaws parallel. **THE TOLES RAPID-ACTING VISE** obtains adjustment *without* the use of RACKS, PAWLS, TRIGGERS, WEDGES, LEVERS, FRICTIONS, WORM GEARS, ETC., therefore they do not slip, clog up, wear out or break.

SPECIAL Send us your dealer's name and we will mail you **FREE** a fine catalog showing **FORTY DIFFERENT STYLES** of **TOLES VISES**.

W. C. TOLES COMPANY
Main St., Irving Park, CHICAGO, ILL.



Are You Interested in Mitre Boxes?

If you are it will pay you to investigate the Langdon Acme. It has all the advantages of any other box made and several that others do not comprise. Our pocket catalogue "D," representing our full line of tools, will be sent if asked for.

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Wood Bar Clamp Fixtures Per Set 50c

OVER 12,000 OF OUR
STEEL RACK VISES IN USE

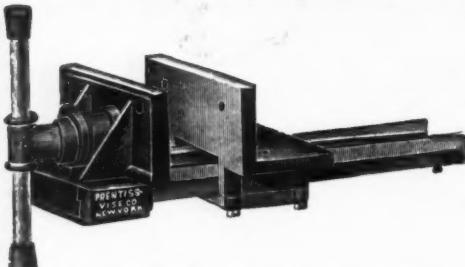
25 doz. Clamp Fixtures bought by one mill last year. We ship on approval to rated firms, and guarantee our goods unconditionally. Write for list of Steel Bar Clamps, Vises, Bench Stops, etc.

E. H. SHELDON & CO.
2815 Madison St., CHICAGO

Price \$2.80
to \$4.00



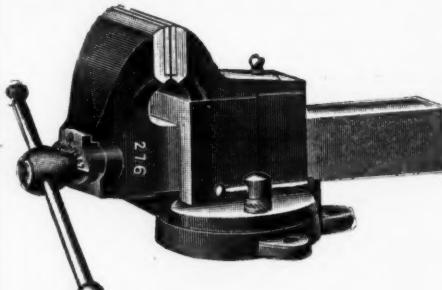
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For Cabinet Makers and Wood Workers. Simplest—Strongest—Cheapest—Best
Send for Catalogue of all kinds of Vises.

PRENTISS VISE COMPANY, MAKERS
44 Barclay Street, New York, U. S. A.

PARKER VISES



MADE
ESPECIALLY
FOR WOOD
WORKERS

FOR SALE BY
DEALERS

SEND FOR
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CHAS. PARKER CO.
MERIDEN, CONN.

THE NEW IDEAL

THE ONLY

AUTOMATIC FLOOR-SCRAPER

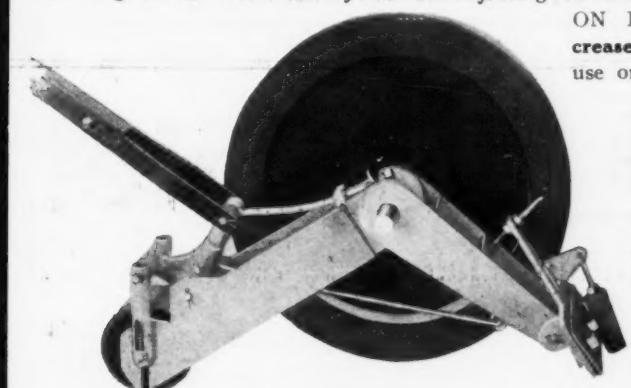
A strictly new departure from other machines now on the market. Does better work, much more quickly than others. Its strongest features are

Automatic Action—Simplicity

Made from best material, by skilled workers. The weight of the machine is in the wheels and therefore directly on the floor.

The Knife is Not Removed for Sharpening, as the frame is hinged at the axle, allowing knife to be raised. By means of adjusting rod on top of frame, WEIGHT

ON KNIFE may be Increased or Diminished for use on different kinds of floors. There is at all times a



UNIFORM PRESSURE ON KNIFE

Automatic Shield in front of knife protects wood-work and also prevents knife from leaving any mark or cut on the floor whatsoever. Pressure on handle has absolutely no effect on action of knife.

IT WILL PAY YOU TO
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SAMUEL DREW, 191 Genesee Street, ROCHESTER, N. Y.



EXPRESS 7 TOOLS FOR \$1.00 PAID

Only one set to each purchaser, to get them known. If after trial you will part with them, we will pay you \$1.25 to get them back.

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Pulls nails faster than others, cuts and rips off bands like magic, all parts interchangeable.

SAVES NAILS, TIME, STRENGTH.

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Their superiority over others is acknowledged by thousands of users. Made-to-order steel used in their manufacture adopted only after most careful experimenting gives them their value.

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Our Tools Bear an
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Equal in quality and usefulness to any Brace Bit

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Cutting 4-32, 6-32, and 8-32 Holes

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WILL SEND ON APPROVAL

Its Work is to Make Openings in Doors for
Mortise Locks.The time is Three Minutes. The Material is
Hard, Soft, Gross Grained and End Wood.

The job is clean, true and parallel with sides of door. The labor is performed with slight exertion. The care is practically none, as the tool does not get out of order. The adjustment is done in a moment's time for the different sizes. The cutters are five in number and cover locks from $\frac{1}{2}$ inch to $1\frac{1}{2}$ inches thick. Thin doors are handled as easily as thick doors.

Riverside, Cal. A. W. MILLER MFG. CO.

Cincinnati, O.

LUFKIN STEEL
TAPES

and RULES
ARE INDISPENSABLE
FOR ACCURATE WORK

MADE BY
The Lufkin Rule Co.
Saginaw, Mich., U.S.A.
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For Sale Everywhere.
Send for Catalogue.



"Last a Lifetime and give Satisfaction to the End"



The Celebrated Barton Planes and Edge Tools for carpenters and all other woodworkers are unequalled by any other make for keen, hard, smooth cutting edges. If your hardware dealer does not handle

The Celebrated Barton Tools, send direct for Catalog. Be sure and specify "CARPENTER'S CATALOG"

MACK & CO., 20 Brown's Race, Rochester, N. Y.

When you think of Floor Scrapers—Think of the FOX FLOOR SCRAPER

It Will Save You Money

We
Send
the
Fox Floor
Scraper
on Three
Days'
Trial—Write
for
Proposition



Don't make
hard work
of Floor
Scraping

Buy a



FOX FLOOR SCRAPER

Money Pays Dividends



REGISTERED

The handiest wood scraping device on the market. Body of tool slides on the floor, insuring a uniform cut, blade is held by a clamp and can be adjusted or reversed in a second's time. Unexcelled for any kind of wood scraping. Never jumps or leaves waves. Every carpenter needs this tool. Price of Fox Cabinet Scraper, \$1.25.

Ask your dealer to order it for you, or we will ship on receipt of price.

**WRITE US BEFORE
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**The Simplest
and Best Device
for Perfect Floor
Scraping.**

FOX MFG. CO., 187 Second St., MILWAUKEE, WIS.

"FORSTNER" BRACE AND MACHINE BITS FOR FINE CARPENTER, CABINET AND PATTERN WORK



leaving a true polished surface. It is preferable and more expeditious than chisel, gouge, scroll saw, or lathe tool combined, for core boxes, fine and delicate patterns, veneers, screen work, scalloping, fancy scroll twist columns, newels, ribbon moulding and mortising, etc.

Manufactured by

THE PROGRESSIVE MFG. CO., Torrington, Conn.

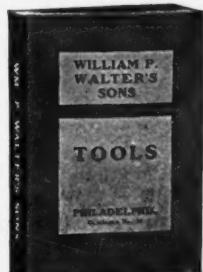
Enquire of your Hardware Dealers or write us direct.

To thoroughly introduce this high grade tool among carpenters, pattern makers and others, we will mail to any reader of the American Carpenter and Builder upon receipt of 50 cents any bit we make from one-quarter inch to one inch in size.

Specially Adapted for Hardwood Working

The Forstner Labor-Saving Auger Bit, unlike other bits, is guided by its Circular Rim instead of its centre; consequently it will bore any arc of a circle and can be guided in any direction regardless of grain or knots, chisel, gouge, scroll saw, or lathe tool combined,

OUR LATEST CATALOGUE No. 20.



Handsomely printed on heavy paper, containing 450 pages, 2000 illustrations, including a full line of **Woodworking and Metalworking Tools, Foot Power Machinery, Lathes, etc.** This is the largest and most complete catalogue we have ever issued, being a valuable hand book for any mechanic. Sent on receipt of 20 cents postage.

W.M. P. WALTER'S SONS

Tool Headquarters
1233 Market Street, PHILADELPHIA

Please mention the American Carpenter and Builder

Smooth, tough "leads" are the result of skilful and careful grinding, working and firing. It is this care and skill that make Dixon's Carpenter Pencils standard. Send 16c for generous sample lot 183 J.

**JOSEPH DIXON CRUCIBLE CO.,
JERSEY CITY, N. J.**

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TAUGHT PERSONALLY AND INDIVIDUALLY BY
CHIEF DRAFTSMAN

of large concern, who guarantees you a first-class drafting-room knowledge, experience and high salaried position in few months, home instruction.

Complete Drawing Outfit, Highest Quality, FREE

Address, Chief Draftsman, Div. 17,
 Engineers' Equipment Co. (Inc.), Chicago, Ill.

FREE TO MY STUDENTS
 Delivered at once
 VALUE \$13.85

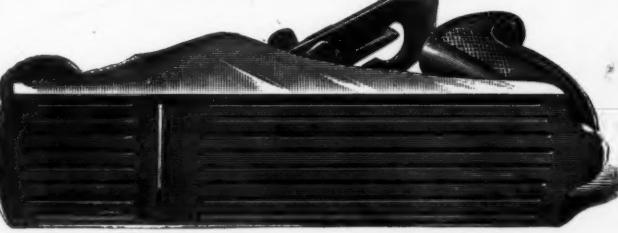


FAR AHEAD for Smooth, easy work and holding edge will be YOUR VERDICT ON TRYING

CHAPLIN'S IMPROVED PLANES

Patented Feb. 14, 1899; Oct. 30, 1900; Dec. 24, 1902

We invite the
 Severest
 Comparative
 Tests

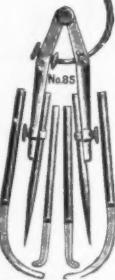


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 "A 'Plane' Talk About a Good Plane!"

We want you to have a copy, for it is a booklet you really need in your business.
 We'll gladly send you this booklet with our compliments, promptly upon receipt of your request.

Tower & Lyon Company, 95 Chambers Street, New York

CALIPERS and DIVIDERS For CARPENTERS



We make several different styles, all good. Get our free Catalogue, No. 186, of the largest line of Fine Tools for all kinds of mechanics.

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ONLY SELF-SETTING PLANE

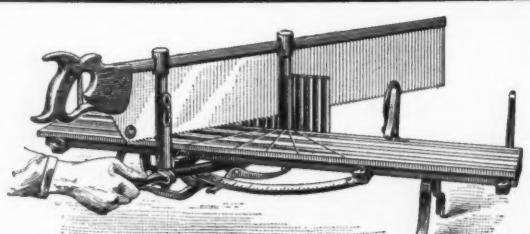
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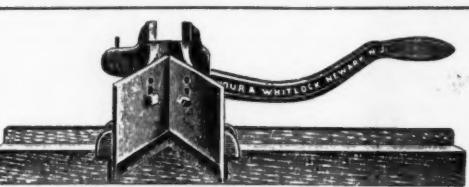
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 We have endeavored to place on the market a Miter Box suitable for practical work, and having tested it thoroughly, we are satisfied we have succeeded in doing so, and are placing this Miter Box on the market warranted in every respect.

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Hand or Foot Power
 2½, 3 and 4 inch Sizes

GUARANTEED ABSOLUTELY ACCURATE
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COMBINATION SQUARES

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No projections to injure the hands.



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Sold by all Hardware Dealers.

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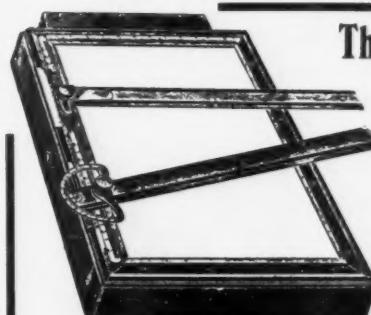
THE AMERICAN Combined Level and Grade Finder



All Progressive and Up-to-date Mechanics are getting one

An instrument with which at one glance you can get the true slant on any line or grade either in degrees, inches or percentage, or all at the same time, and will at once give the exact distance need to plumb up to a true level.

A Civil Engineer that you may have with you at all times. The most practical, durable and convenient instrument of the day. The longitudinal recess which is shown in cut is well worth the low price of the instrument. For terms and agency apply at once to



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SAVES TIME

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A STRICTLY HIGH GRADE TOOL. WARRANTED
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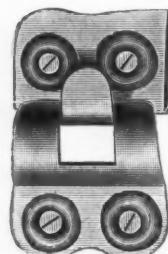
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3½ Acres of Floors



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It's found only on

GOSSETT DETACHABLE SUSPENSION HINGES

Use them and you'll save time—please your customers—
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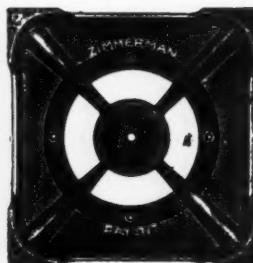
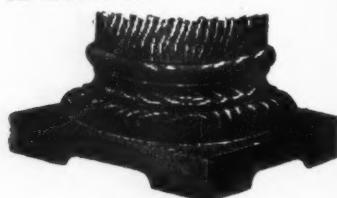
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All Sizes for Round or Square
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FOR RESIDENCES, HOTELS, OFFICE AND APARTMENT
BUILDINGS

Absolutely sanitary, require no cleaning, never wear out
or show the effects of use. Not affected by hot or cold
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Making Your
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You will be surprised at
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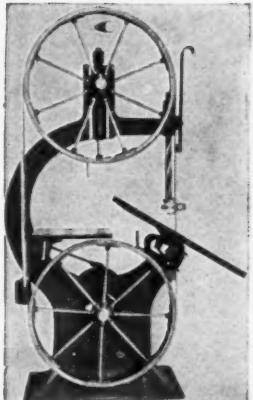
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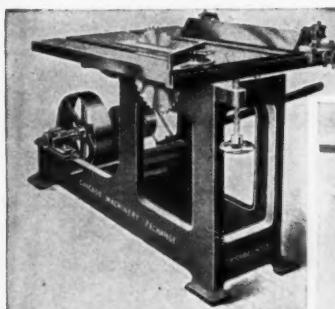
Chicago No. 7
Improved Swing Saw



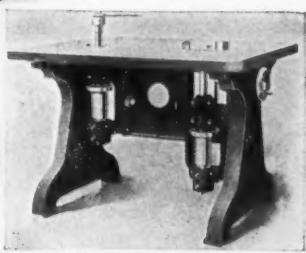
Chicago Nos. 16 and 17 Jointer
8", 12", 16"



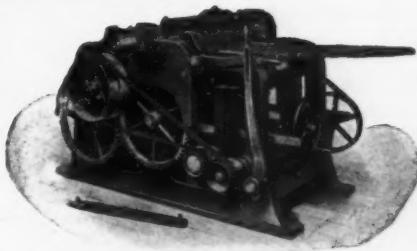
Chicago No. 1 Band Saw 36 inch.



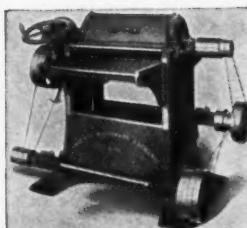
Chicago No. 5
Combination Rip and Cut-Off Saw



Chicago No. 19 Shaper



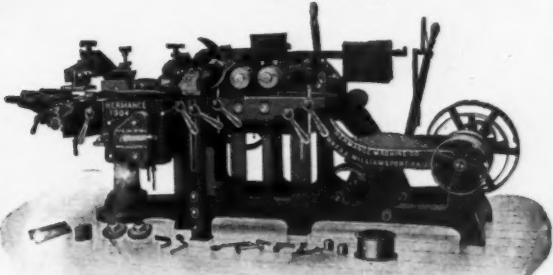
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Improved Variety Saw Bench



Hermance 1906 "Wide Open" Double Quick Moulder
Built in Six Sizes 7, 8, 9, 10, 12, and 14 inches wide

The first cost of our machines may be a little more than some others, but they are the cheapest in time, as you will have no repair-bills to pay. We will assist you to arrange for a shop. We have over 500 machines on exhibition. Come in and let us talk it over. We have also a large stock of modern slightly used machines conscientiously rebuilt.

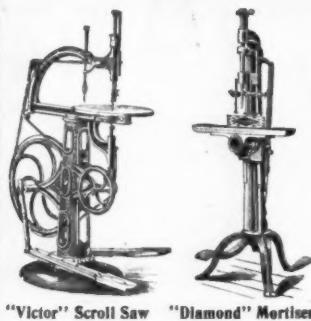
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WOOD-WORKING MACHINERY MERCHANTS

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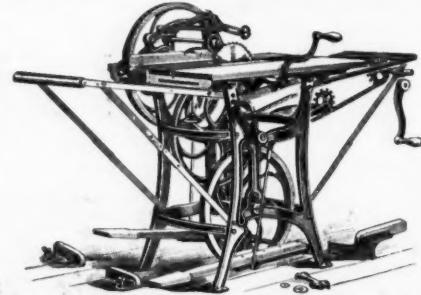


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FOOT, HAND AND POWER Wood-Working Machinery

For Carpenters, Builders, Cabinet-Makers, and
Other Wood-Workers

BUILT FOR HARD WORK, ACCURATE WORK AND LONG SERVICE



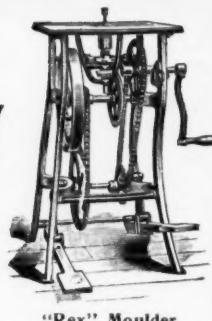
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Enterprising mechanics are quick to see the superior
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3 inches thick at the rate
of one foot a minute.

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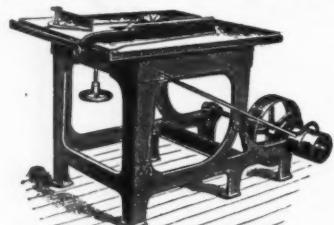
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Only \$50.00 for an all Iron SAW BENCH with
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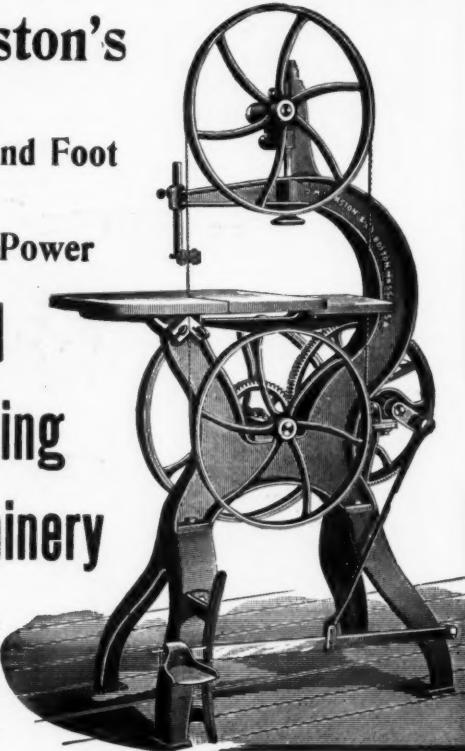
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Hand and Foot
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**Wood
Working
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20-in. Hand
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Saw.



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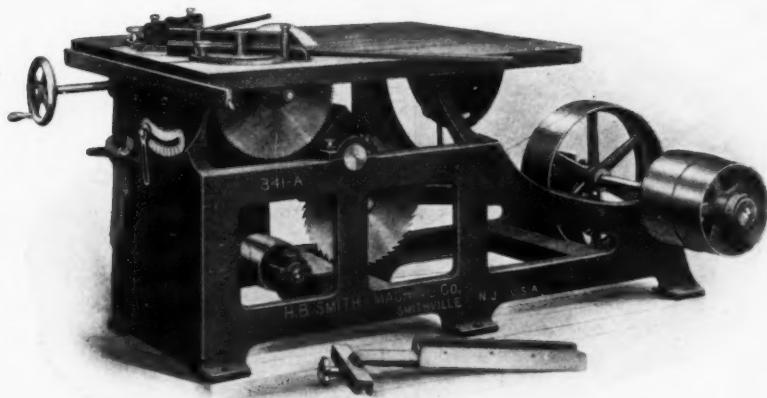
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The Sign of
QUALITY

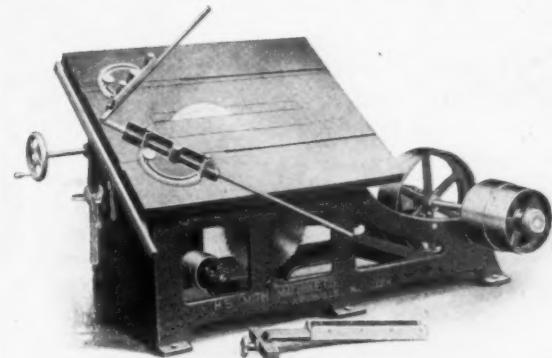
Modern Shop Equipments a Specialty
We Make 150 Different Kinds of Machines

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No. 341 A Combination Double Arbor Saw

EVERY user of machinery knows that if he were obliged to reduce his equipment to one machine he would retain a **Universal Saw**. The **Circular Saw** is the indispensable tool—the beginning of all things in a shop—therefore why not make a wise selection? We build 21 different types of sawing machines and feel competent to consult intelligently with you on this subject. The Machine shown herewith is very useful for general work, and a great labor-saver when operated on specific wood working problems. Please bear in mind that all machines designed by **Smith of Smithville** always contain approved features for the elimination of danger to the operator. We also guard against the annoyance and expense of breakage by building machines sturdy and well, regardless of the influence of low priced competition. The name **Smith** in connection with wood working machinery is a synonym of **Quality**. Write for special circulars and prices.



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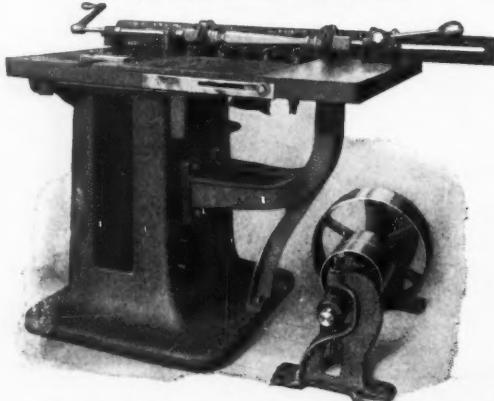
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That Users Claim is Indispensable to Every Jobbing Shop in the Building Line



No. 6 Universal Turning and Block Machine

Not only because it does Turning, Etc., at one-sixth the cost of Hand Work, but because it is so convenient and quickly set up for all kinds of odd jobs.

Here are a Few of Its Uses:

Makes all kinds of Round and Square Balusters and Spindles, Corner Beads, Base Angles, Kitchen Table Legs, Raised Panel Balusters, Twisted Center Balusters, Shelf Spindles, Square Columns, Base and Head Blocks, Fan and Star Corner Blocks, Fence Pickets, Sunrise Panels, Twisted Moulding, Fancy Butt Shingles, Window and Door Frames; does Panel Raising, Moulding Circle Casings, Rounding Steps, Dadoing, Rabetting, Jointing, is a first class Cabinet Saw — in fact there is almost no limit to its use.

Our large circular describing the machine is very interesting, as is also our Special Proposition. Drop us a line and we'll do the rest.

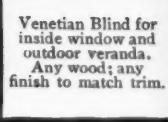
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BLINDS

Screens and Screen Doors



Venetian Blind for inside window and outdoor veranda. Any wood; any finish to match trim.



Sliding Blinds for inside use. Require no pockets. Any wood; any finish.

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The Phoenix Sliding Blind Co.

Enclosed find my check for blinds. I am pleased with them and, sorry I did not have them put throughout the whole house.

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Economy!
Convenience! PHOENIX SLIDING BLIND CO.
BRIDGE & CANAL STS.

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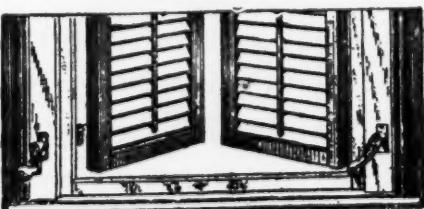
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Small orders are as carefully handled as large ones.

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Standard Shutter Worker

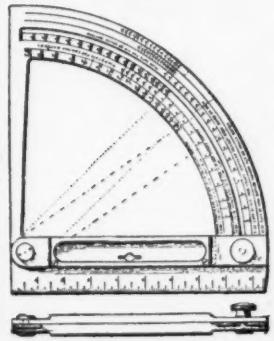
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Opens and closes the blinds without raising the window. Automatically locks the blinds in any position desired. Made of gray and malleable iron. The best and most durable blind hinge. Incomparable for strength, durability and power. Can be applied to old or new houses of brick, stone or frame. Send for illustrated Circular. If your hardware dealer does not keep them send direct to

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A NEW TOOL FOR CARPENTERS

PRICE \$3.50. A. O. Calhoon, Patentee, Victor, Mo.



The Rafter and Polygon Bevel is a handsome, practical, durable tool particularly adapted to cutting rafters, etc., and it should be in the hands of every carpenter and joiner in the country. The calculations in cuts, pitches, lengths, etc., given on this tool are more nearly correct than can be found on any square on the market, the calculations having been carried out to the hundredth part of an inch. It is the embodiment of the draft-board, square, try-square, bevel-square, plumb, level and bevel-protractor in one small compact and convenient tool.

WHAT SOME MECHANICS SAY ABOUT IT:

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ALFRED W. WOODS' KEY TO THE STEEL SQUARE.



This is it.

The Key,
Book of
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Full Size
4x5 inches.

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PRACTICAL TREATISE ON THE STEEL SQUARE

and we will send a copy, without charge, to anyone who in writing us will mention the American Carpenter and Builder.

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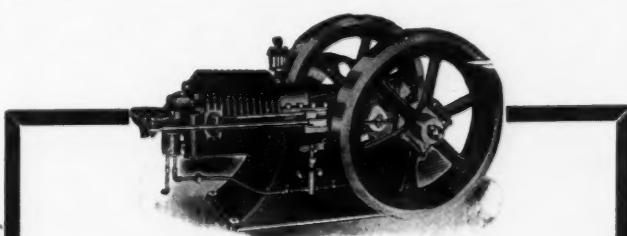
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The Perfect Joist Hanger

For Concrete Blocks, Wood
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Ornamental Iron Work.

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Ratchet Driver with Screw Holder (3 Styles, 5 Sizes)

We make Screw Holder Bits for your Spiral Driver

Magazine Ratchet Screw Driver No. 65. 1 or 6 in. Shank (4 Bits)

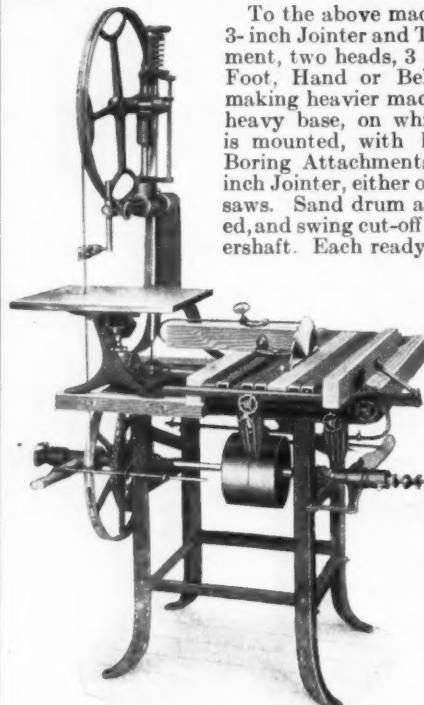
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They're in the same high class with our other Tools.

Send for our New TOOL BOOK—it's FREE

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To the above machine we can add 3-inch Jointer and Tenoning Attachment, two heads, 3 inches wide. For Foot, Hand or Belt Power. Also making heavier machines with long, heavy base, on which countershaft is mounted, with light and heavy Boring Attachments, 3-inch and 6-inch Jointer, either of three size band saws. Sand drum and disk combined, and swing cut-off saw from countershaft. Each ready for use without change, driven from same countershaft with friction clutches if preferred.

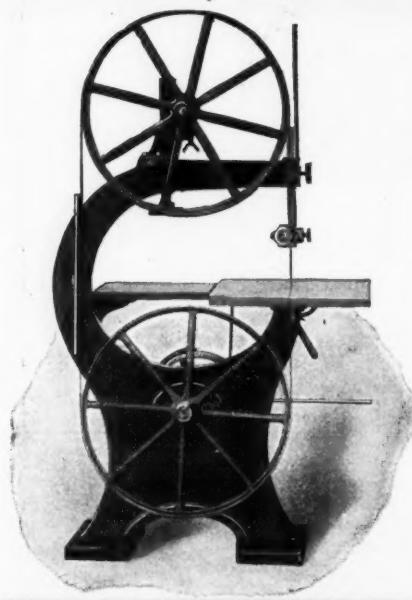
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Catalogue and Special Price List FREE.

PARKS B Ball B Bearing Machine Co.

FERGUS & C. N. & D., Cincinnati, O.



The rigid construction and modern design of the new 32-inch

Crescent Band Saw

insure a machine of the very highest efficiency as a rapid producer of accurate work.

Crescent machines cost less than others of equal merit. They are best because they are strong, durable and practical.

They are low in price because they are in big demand and we have to build them in large quantities.

Send at once for catalogue describing our complete line of Band Saws, Saw Tables and Jointers.

THE CRESCENT MACHINE COMPANY
224 Main St., Leetonia, Ohio, U.S.A.

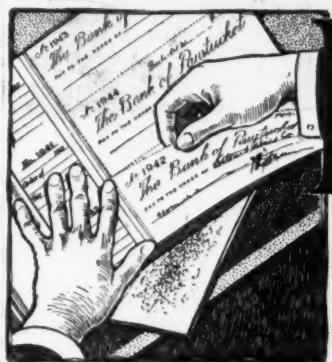


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 "BEST BY EVERY TEST"

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so satisfactory and *so* serviceable that it is always a pleasure to send a check therefor.

Eaton & Prince hand-power elevators are carried regularly in stock in Chicago in both corner-lift and center-lift patterns in various sizes.

Orders are thus filled immediately upon receipt.



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**DUMB WAITERS
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 OF THE MOST IMPROVED
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 INVALID LIFTS
 TRUNK, CARRIAGE,
 SIDEWALK AND
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 CATALOGS AND
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The Reliance Hoist

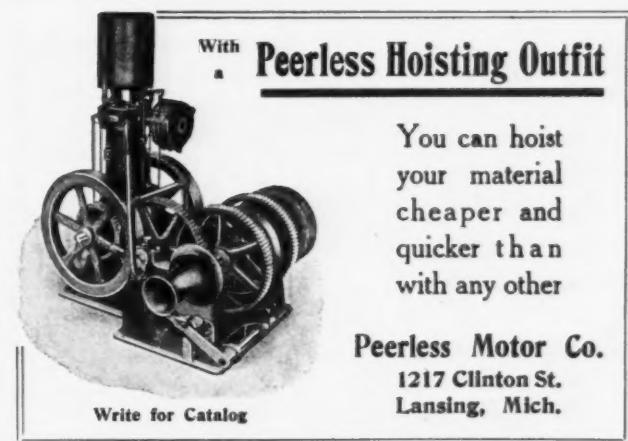
will elevate 1,000 lbs.
 125 feet per minute

PRICE

\$150.00

Without Power
 Power furnished when desired.
 Write for descriptive circular.

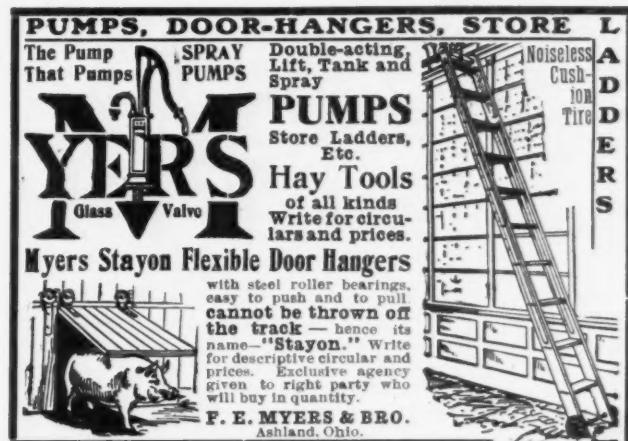
Secord & Weatherwax
 Jackson, Mich.



With Peerless Hoisting Outfit

You can hoist
 your material
 cheaper and
 quicker than
 with any other

Peerless Motor Co.
 1217 Clinton St.
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The Pump That Pumps SPRAY PUMPS Double-acting Lift, Tank and Spray

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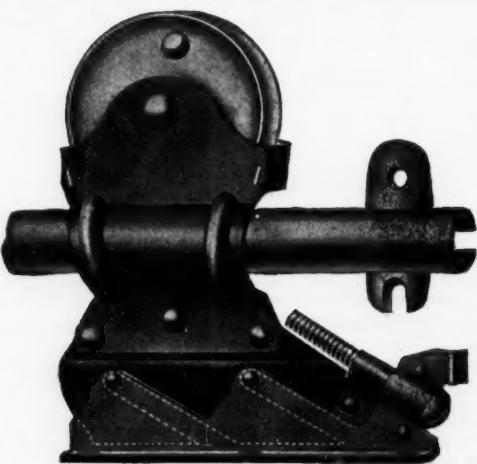
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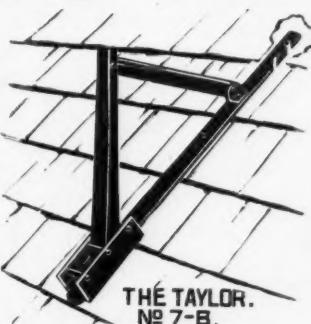
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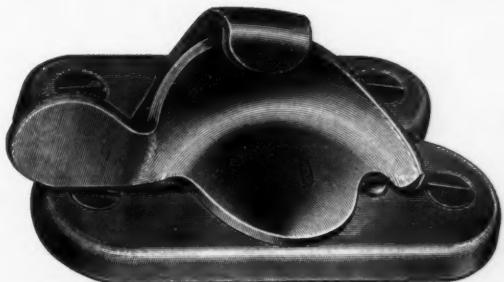
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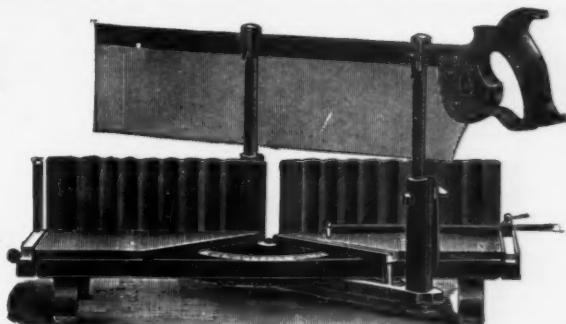
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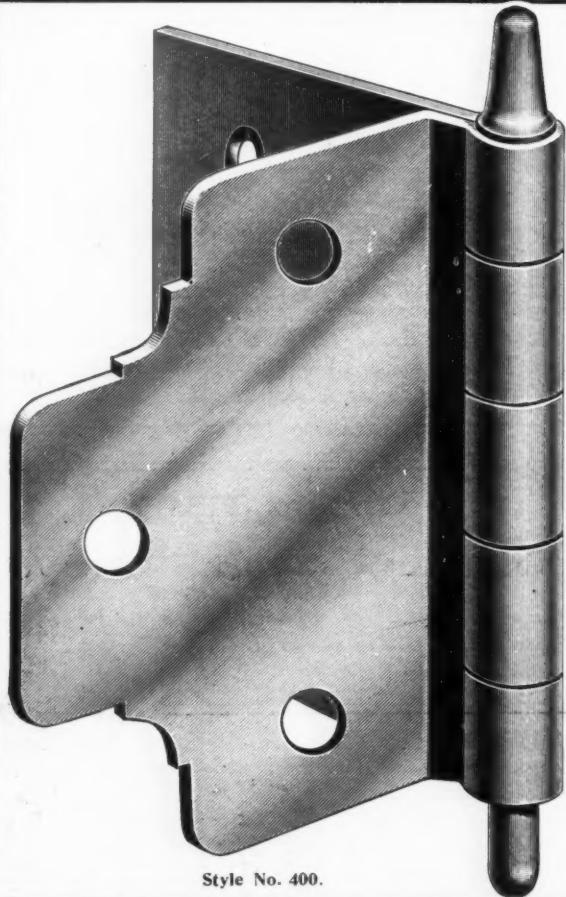
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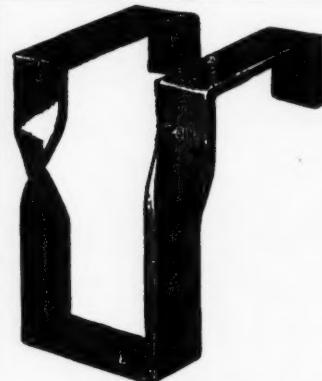
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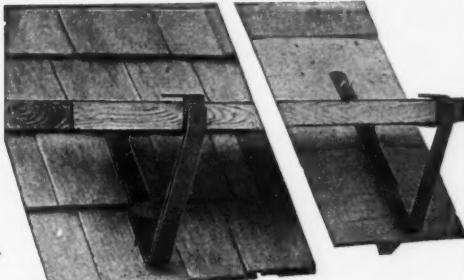
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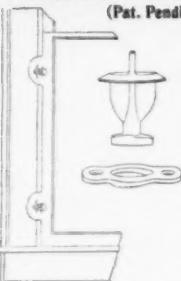
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7	140	20	375
8	150	20	400
9	160	20	425
10	170	20	450
11	180	20	475
12	190	20	500
13	200	20	525
14	210	20	550
15	220	20	575
16	230	20	600
17	240	20	625
18	250	20	650
19	260	20	675
20	270	20	700
21	280	20	725
22	290	20	750
23	300	20	775
24	310	20	800
25	320	20	825
26	330	20	850
27	340	20	875
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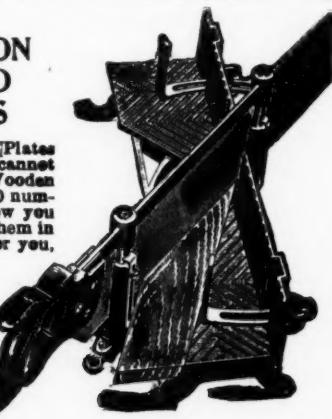
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American Carpenter and Builder

Entered as second-class matter July 1, 1905, at the postoffice at Chicago, Ill., under the Act of Congress of March 3, 1879.

WILLIAM A. RADFORD, EDITOR-IN-CHIEF.

WILLIAM REUTHER, EDITOR.

ALFRED W. WOODS, ASSOCIATE EDITOR.

Published monthly by

American Carpenter and Builder Company

185 JACKSON BOULEVARD, CHICAGO.

WILLIAM A. RADFORD, President.

CHARLES W. RADFORD, Vice-President.

VOL. V

APRIL, 1908

No. 1

The AMERICAN CARPENTER AND BUILDER is issued promptly on the first of each month. It aims to furnish the latest and the most practical and authoritative information on all matters relating to the carpentry and building trades.

Short practical letters and articles on subjects pertaining to the carpentry and building trades are requested.

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Furnished on application. The value of the AMERICAN CARPENTER AND BUILDER as an advertising medium is unquestioned. The character of the advertisements now in its columns, and the number of them, tell the whole story. Circulation considered, it is the cheapest trade journal in the United States to advertise in. Advertisements, to insure insertion in the issue of any month, should reach this office not later than the 20th of the month preceding.

THE best workman doesn't always have the best manners—but he ought to.



PERHAPS there isn't a newcomer in your neighborhood—but if there was, would you have made a business call?



From England

FROM time to time it is brought home forcibly to us that the AMERICAN CARPENTER AND BUILDER enjoys an international reputation. In its last issue, after quoting an article from a recent number of the AMERICAN CARPENTER AND BUILDER, the *Slate Trade Gazette*, of Hull, England, remarks:

"By the way, as an evidence of the enterprise of

our American contemporary, we might mention that they are offering two houses in addition to valuable monthly cash prizes as awards in a competition. The proprietors of this journal are nothing if not 'go-ahead.'"

We are not surprised, however, that our Great Prize Contest is attracting such wide attention and such favorable comment, for it is indeed a most remarkable offer—two beautiful homes free, for the two who secure the most subscribers to the AMERICAN CARPENTER AND BUILDER before July 1, 1908! And, in addition to this, there are the monthly cash prizes and the liberal commission on each subscription! It is a wonderful offer; and new workers are availing themselves of it every day.

In a contest of this kind, a late start need not prove a handicap; for there is plenty of time still to thoroughly cover any field. What your home town will yield if properly and systematically worked will be a revelation to you.

The winners of the monthly cash prizes for February were J. M. Neinonen, Negaunee, Mich., \$50; and T. J. Holler, R. R. No. 2, Peabody, Kan., \$25. These cash prizes are repeated each month, and go to the two securing the greatest number of subscriptions during that month. Make the next month yours.

Home Building

HERE is something in the chirp-chirp of the first robin, in the re-awakening trees and grass, in the pungent scent of the newly plowed soil, that gets away down into the real heart of a man—reviving old hopes, and kindling new ones. However deeply he may have become buried in city flats or however long he may have roamed as a village "renter," that old instinct remains—every man wants a home, a real chunk of good old Mother Earth, where he can stand firmly and say: "This is mine; here I will build me my house; here spade in my garden, if I like, and train my cucumber vine along the back fence; here teach my boys to become men." The flood of new life in the spring strengthens this feeling; and thousands are responding to it.

And sentiment of this kind, if it is a sentiment, is a good thing, especially since it is backed up with the solid facts of a good business proposition. Merely as an investment, considering nothing but the money involved in the rent vs. home-of-your-own question, there are very few localities where one can afford to

continue long a "renter." It is a safe investment, too, more than ever attractive this year—over which the bulls and bears can not play! There is no need, however, of going into the figures here; for very often the matter of money is not the important one, not the compelling motive to home building. And it should not be; it enters only to determine how expensive a place it can be.

The great inducement for building, with most men, is the home itself. Few of us have time to analyze our state of mind on this subject; we just *feel* the need. We want to get away from the periodic "moving day," that hopeless institution always in search of contentment but never finding it; we want our own hearth stone, where the family circle may gather; we want a place where improvements will be worth while.

There are many hungers a man has in this world, some bad, some partly bad, some good. This home-hunger is one of the best. It encourages law and peace; it makes good citizens, it leads to consistent effort and puts a stop to the rolling stone by building it into the foundation wall.

The man who would teach his son a practical home lesson of sticking right to a job and fighting it out, feels a trifle embarrassed when he has to move the scene of his instructions the first of each May!

We feel that the home life should have a fixed center, something substantial to tie to, a place always to be looked back upon with a peculiar pleasure and reverence. So build; but build thoughtfully and well. For the influence of the house is great upon the character of the people living within.



Chimney Construction

ONE-FIFTH or fully 20 per cent of the losses by fire in dwellings in the United States are caused by defective flues; all chimneys should be built from the ground; the walls should not be less than eight inches in thickness and the flues will be improved from fire-resisting and draft view points if lined with terra cotta flue lining. It is quite common to erect chimney flues only four inches, or half a brick, in thickness. Such flues are very dangerous. In view of the fact that it costs very little more to make the flue-wall eight inches in thickness instead of four, such neglect is simply criminal. Before deciding upon a "half-brick" chimney, ask your architect or builder how much additional it would cost you to build an eight inch chimney. You will probably not only build an eight inch chimney, but you will line it with burnt clay pipe.



Proposed National Paint Law

ON SATURDAY, February 22, Congressman Marshall, of North Dakota, introduced in the House of Representatives a national bill, modeled along the lines of the Pure Food and Drug Law, for the purpose of preventing the sale or transportation of adul-

terated or unlabeled paint, oil and turpentine. This bill has been referred to the Committee on Interstate and Foreign Commerce, and hearings will be held to enable any whose interests might be affected by the enactment of such a law to express their views before it is brought up for passage. This bill is in part the result of a conference held at Washington on January 19, between Congressman Marshall and gentlemen representing various interests in the paint trade, and in addition has been improved and modified by Prof. E. F. Ladd, of North Dakota, who has charge of the enforcement of the pure paint law in that state.

The Marshall bill provides fines or imprisonment for any one who shall sell or expose for sale any paint, oil or turpentine which is adulterated or mislabeled, and defines these terms, providing for a form or method of labeling by which the contents of the packages will be clearly indicated. Following the precedent established by the Pure Food and Drug Law, the Marshall bill contains a guaranty clause, by which the painter or retail dealer would be able to avoid penalties under the act, if he could establish a guaranty signed by the manufacturer or wholesale dealer, from whom he purchased the goods, that they were labeled in accordance with the provisions of the law. The penalty would then fall upon the manufacturer, who alone would be responsible for violation of the law. This is a very just provision, for of course the painter or retail dealer has no means of knowing whether an unbroken, original package of paint complies with the statement on the label or not. All the state laws, so far passed, put the penalty upon the retail dealer—and under the law the painter who contracts to furnish labor and material is as much a retail dealer as the man who keeps a paint store. The reason for this is that the painter or dealer frequently buys goods manufactured outside of the state, and in such a case it would be impossible to enforce the penalty for violation of a state law upon the manufacturer, hence in order to protect the public, it is necessary to fix the responsibility upon the painter or retail dealer. To be sure, he has recourse to a suit at law before the United States Court, against the manufacturer, but this does him very little good if, meanwhile, he is in jail. A national paint law, such as the Marshall bill, is therefore a protection to the retailer.

Of course it is quite possible that the trade may find objections to the bill now before the house, and that it may be necessary to modify it in some particulars; but it is more than likely that any modifications that may be offered will be more in the nature of a change of language, or in matters of detail, rather than in the broad general principle, aimed at by the Marshall bill, of a law which shall provide for the protection of the property owner and the painter in the purchase of paints, oil and turpentine, and insuring that the consumer shall get exactly what he pays for and what the label indicates the package to contain.



Just a Little "April Fool Joke"



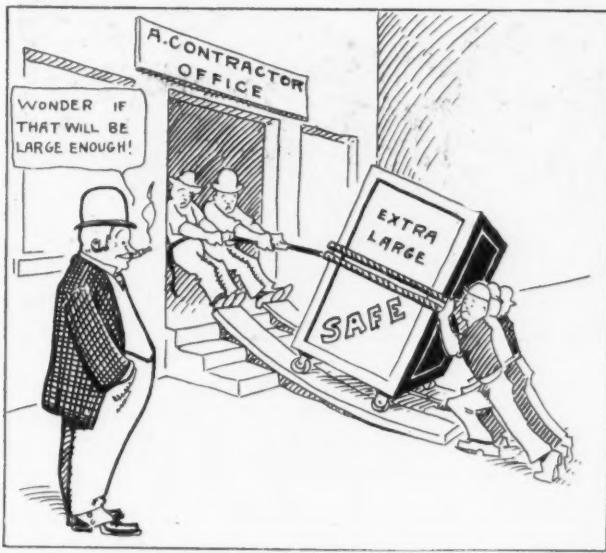
April Showers



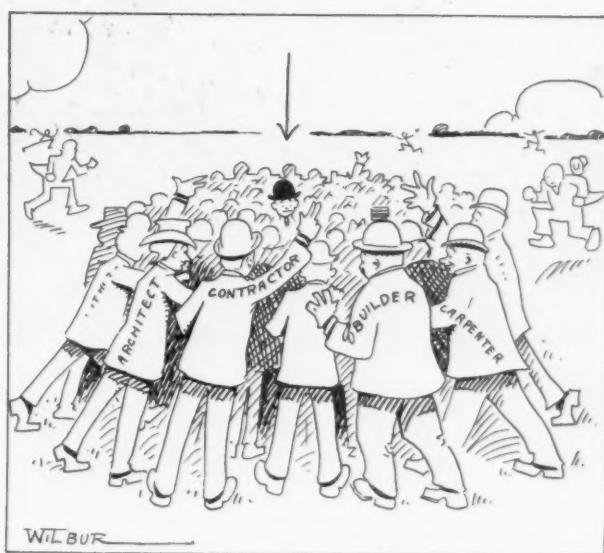
A Willing Leap Year Victim



A Chance for a Big Contract! What?



A. Contractor Preparing for This Year's Business



Puzzles: Find the Man Who's Going to Build



A NARROW ribbon of a canal ties the lazy blue town of Delft to Rotterdam, and a broader band of water connects Rotterdam and Antwerp. The traveler who lands at Antwerp, worn out with the discomforts of a long voyage, will do well to find the little canal boat the morning after his arrival and go aboard. It is very certain that if he has chosen his hotel near the cathedral he will want

church tower will be the vesper hymn that lulls you to sleep.

At 10 o'clock a hymn peals forth in the darkness, clear and loud above the noises of the city; at every quarter-hour the chimes ring out a different melody. At midnight you conclude that eight numbers of this program are enough, and you are willing to dispense with further music and go to sleep.



Typical Town Hall Found in Most of the Larger Cities

to take passage in something, even if it sails for parts unknown.

If you have read your guide book faithfully you know that the most interesting thing in Antwerp is the cathedral, and accordingly you chose a hotel in the cathedral square, congratulating yourself that you may go as often as you please to see the famous Rubens pictures, and that at night the chimes of the

Now your one object in life is to lose consciousness before the next quarter strikes. You are just going off when the chimes startle you with their sharp call. Then begins a fresh race with time, and always when sleep and oblivion have almost sealed your ears, the pealing bells break in again until, in the gray dawn, the slumber of utter exhaustion gives a few hours' respite from the jangling noise.



A Street in Delft, Showing the Old Church Where Van Tromp Is Buried

At breakfast the man at the table next to yours grumbles, "If it were only a cat you could relieve your feelings by throwing boots at it, but a decent man feels that he can't even hurl the words he wants to at a Christian hymn in a church spire." The landlord looks not too well pleased when a solemn procession files out of his hotel at an early hour in the morning. His look of displeasure changes to blank astonishment, when, observing from his doorway the retreating figures of this company, he sees two seemingly sane men deliberately stop, put down their suit cases and shake their fists at an unoffending church steeple, whose only response is the gentle answer—a melancholy and persuasive hymn—which in this case does not turn away wrath.

A day on the lovely waterway leading from Antwerp to Delft makes one forget not only the miseries of the North Atlantic, but even the first awful night in the City of Chimes. No journey affords a more beautiful or more picturesque view of Holland, or a more delightful rest, than this trip on the canal boat that slowly threads its way between the dykes that outline the path to Delft.

Antwerp fades in the distance, first its towers and medieval fortresses, and then the wonderful cathedral spire which Napoleon, who loved it, used to say was made out of Mechlin lace. You know before an hour has passed that you are in Holland—what else can these monster windmills mean, or the fishermen in great baggy trousers and wooden clogs. At the first landing the peasant women, who are old friends because you have met them so often in the backs of

magazines, come to sell, not the cocoa that is "grateful and comforting," but strawberries and cherries and early spring vegetables.



Most Pretentious Piece of Architecture in Delft

About the Dutch women it is possible to say—how strange! how interesting! how quaint—you cannot truthfully say—how beautiful! Sometimes it takes half



Canal Scene near Delft

an hour of close study to convince yourself that a young girl is pretty in spite of the fact that she is masquerading in a lace cap pinned on with clumsy metal knobs,



Typical Faded Red Brick House of the Older Cities of Holland

an awkward full skirt, and an ill-fitting bodice. The bare arms, purple with cold, are free for the hard work that is demanded of them; and the wooden clogs can travel miles along the tow path without being worn through; so the costume is perhaps adapted to the life these women lead.

The dogs that bear such heavy burdens, and drag the freighted canal boats, the women who are their weary comrades in ceaseless labor, awaken sympathy and indignation at first; but when it becomes evident what a continuous warfare Holland must wage against a relentless and ever encroaching ocean, it becomes evident also that men and women and every living



Typical Town House, Two Windows Wide and Two Stories High

thing must join in the struggle, if man, and not the sea, is to win in the conflict.

Holland, people and landscape, can never seem a strange country to one who has frequented art galleries. The Dutch knew how to paint perfectly the things they loved best—their simple home life, the green meadows, their beloved cattle, and the uncertain skies. Uncertain skies they are, for one moment the heavens are serenely blue, the next instant a cloud hides the sun, the wind blows with fury and the world becomes a dreary gray. After a quick, drenching rain, lines of white streak the horizon, the wind blows the over-shadowing clouds away and it is June again.

The Dutch artists have caught so well the varying light on sky and meadow, that, as one glides along the canal, with the green pastures, dotted with black and white cattle, stretching away on either side, it

all seems a part of some familiar painting, and the traveler feels himself a part of it-caught and held fast in the gray cobweb mist, which is so often the atmosphere of a Dutch picture.

In the early afternoon Rotterdam appears through a veil of fog—a confusion of ships, houses and windmills. Sober and staid as Rotterdam is, the houses present an almost hilarious appearance, leaning as they do in every direction, as though they were in the act of reeling, at the same time making a violent effort to stand erect and convince you that they are sober. Sometimes the buildings the entire length of

the street lean in one direction, like a field of grain swept by the wind; sometimes the upper stories lean far over the street. At the street corners the friendly houses gossip away with their heads together. The effect, some one has written, is "an indescribable confusion of lines, a real architectural frolic, a dance of houses, a disorder that seems animated." The reason that these old houses refuse to stand erect is that the soil of nearly all of Holland is reclaimed from the sea, and as a foundation cannot wholly withstand the pressure of the heavy piles of brick; the unequal yielding gives the streets this peculiar appearance, seen nowhere else unless in a town recently shaken by an earthquake.



A Windmill that Is Home and Factory Combined

The houses of Holland, viewed singly, are not interesting, except as neatness, regularity and medi-

ocrity are interesting. Study in detail a group of three or four houses in any city street, and you have studied them all. The buildings are usually of brick, sometimes plastered over. The front wall is carried on up beyond the roof, and at the top usually takes on the form of a triangle with many variations. Little steps, plain or with fancy pinnacles, may be cut in, or the sides may curve inward or outward, to be adorned at the base and the apex with ugly plaster ornaments. The decoration near the top of the roof or above the door may serve a purpose and indicate the wares sold within. Another outward embellish-

ment, more useful than ornamental, is the pulley so frequently seen suspended from upper windows for the raising or lowering of baskets or buckets. The charm of the houses here is what one has been led to expect—things are so marvelously clean, within and without. No American enjoys sleeping between two great pincushions that serve for mattress and coverlet; but no one can deny that the covers are snowy white. The bare floors paved with dark red tiles may seem cheerless, but the most delicate garments that sweep across them reveal no trace of the contact. Housecleaning seems to be the only occasion when the women of the poorer classes have a frolic. During the morning hours the passerby may see this water carnival. There is a positive fury of scrubbing, nothing—from the metal door to the stones

to the floor.



A Country Road in Holland

in the pavement—escapes. Water flies in all directions, and water is certainly the element in which Holland revels. What wonder, then, that everything is spotless—being so often washed!

The forests at the end of the city streets are unusual—an amazing confusion of trees, masts of vessels, and network of cordage. Looking along an avenue, the scene at the end is suddenly obscured by a curtain, then the ship and its sail slip by. Boats seem to move upon the land, and water seems here as sure and stable an element as the earth. One loses the fear of the sea, and even the sense of distinction between land and water.

After the canals and dykes, nothing that man has constructed in Holland is better worth man's study than the windmills. This is one feature at least in the architecture that is distinctive. Like everything else in this country, they may be picturesque if they choose, but they must be useful first. Their great moving arms press into service the four winds of heaven—they raise water from lower levels, they saw wood, and grind everything that is to be ground, from rock and shells to flour and tobacco. As wealth is counted in Africa in terms of cattle so it is sometimes counted in Holland in terms of windmills, and to marry even one windmill is no small achievement. A girl with three windmills is an unusual prize. A Dutch mill is usually several stories high—near the middle a sort of a balcony encircles it. Windows and curtains show there is a habitation of some sort within, though oftentimes the little house is affixed to the side of the mill. Living under a great pump, or upon a canal boat with water flowing either above or below

or in any case on the very bank of a canal seems to give the amphibious Dutchman a feeling of home. It seems that he would be homesick in an



Entrance to Prinsen Hof, where William the Silent was Assassinated

ordinary house on dry land away from the water.

A people who stay at home and do well the thing they ought to do, a people with whom duty is a habit, can be heroic at need. Every little town shows with pride some place of historical interest—buildings held sacred because a hero has dwelt within. It was at



Canal Scene in Holland

the grim old castle in the historic town of Delft that the greatest of heroes of Holland met his death. The gates of the Prinsenhof—the scene of the murder of William the Silent—still cast a gloom over those who leave the sunlight for its dark court yard, in spite of the quaint and humorous little Dutch

figures carved in relief over the gate. The oldest church in Delft stands near, its tall tower surmounted by four queer conical pillars.

An hour and a half on the loveliest of tiny canals and one has passed from old-fashioned Delft to the very modern and wealthy city of The Hague. It is, of course, the center of fashion during the season, for the summer home of the queen is there. But the cities that are typically Dutch are far more interesting than The Hague with its French atmosphere, or Amsterdam, with its element of modern commercial activity.

Holland is lovely, not deliberately, but merely because it cannot possibly help itself—the meadows are green because of the abundant rainfall—the black and white cattle are there because of the meadows—the windmills are not for scenic effect—the wonderful little canals exist for the transportation of cabbages—and the women and dogs who drag the canal boats along the tow path do not undertake this task to furnish the bit of life and color needed.

Along the canal from The Hague to Delft are many summer houses with orderly little gardens and orderly little inscriptions over the garden gates, which seem to sum up the character and spirit of the Dutch people. Industrious, practical and self-respecting, they deserve to be what one of their mottoes enjoins them to be: "Tranquil and content."

A Curious Moroccan House

A DISTINCTIVE STRUCTURE OF THE NORMANESQUE GOTHIC SCHOOL—DONE IN MUD AND STRAW

By R. W. Emerson

ONE day while enjoying a ride about a dozen miles from Tangier, in a vicinity where the straw huts were plastered upon every hillside, I came across a curious house which, it occurred to me, American builders would like to see through the medium of my camera. I thought that I had seen and classified most of the species of buildings in Morocco, but this one was distinctly of a new variety. There was a faint suggestion of the Norman about it—or was it Gothic?—and yet the grass of which it was made bespoke Morocco. However, the house could

mud nest. The only way a Moor knows where he lives is by the dogs or the women, and when the dogs are away he is apt to be mistaken even then.

This house had evidently been built by a person who had a faint idea of what a house should be, I thought. It was big enough for a person to lie down in without doubling up. And it had a door through which it was not necessary to crawl upon one's hands and knees. Also windows—a great novelty in Moorish houses! Even that was not all, for the windows were not mere holes punched through the walls, but well constructed windows. It would not have surprised me to have found glass in them—but I didn't.

Making inquiries as to who had built the house—thinking that I had found one progressive and original Moor—I was at first unable to get any information, but finally a native said solemnly:

"It was Hadj Muhammed, son of Muhammed Ali—may Allah bring him rest! He saw the house of the Infidel—the frown of Allah be upon him!—and Allah took away his senses for looking upon it. Then he built this house! Allah is great!"



A Curious Moroccan House

no more be called a native house than St. Peter's at Rome could be called an Indian wigwam. To begin with, there was architectural design. Now, in most Moorish grass houses there is no more attempt made at originality than a wasp makes when it builds a



Wife (looking up from her book)—"You know a great many things, John; now, what do you think should be done in a case of drowning?"

Husband—"Have a funeral, I should think."

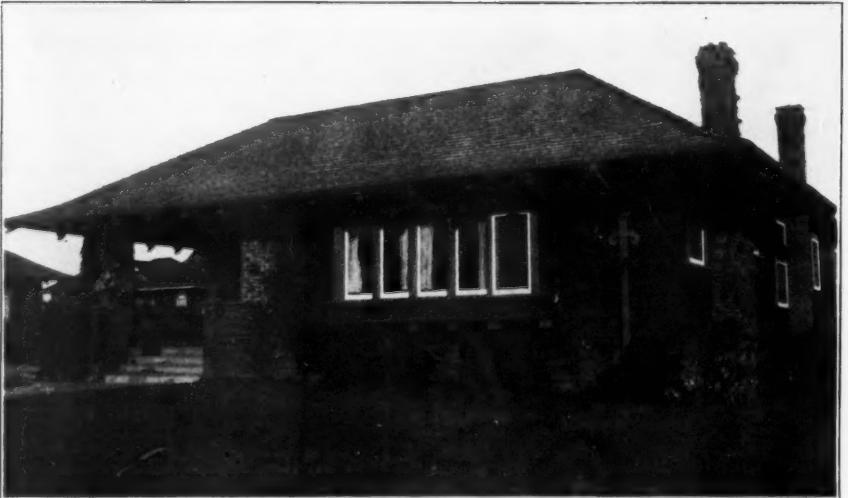
Bungalows

We present on this and the page following six designs, typical of this delightful and increasingly popular form of home construction. In selecting these examples an effort has been made to show a variety of tasteful designs, with a view to giving the readers of the American Carpenter and Builder a good idea of the possibilities of the neat, well planned bungalow.



A VERY effective use of cobble stone has been made in this case. Generous window space has been provided, assuring an abundance of light and air. The construction throughout is strong and substantial, suitable for any climate. There are six rooms and bath, conveniently arranged.

A VERY pleasing result is here attained at small expense. The low sweeping gable roof with exposed framing extends far out, protecting the entrance, thus giving a unique porch treatment that is especially good. The interior is finished in most approved craftsman style.

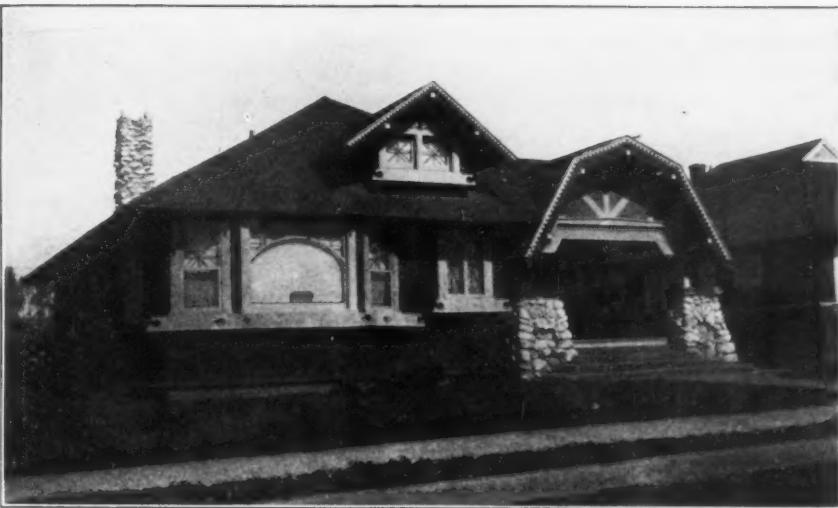


THIS quaint little house suggests the "simple life," yet it has all the modern conveniences, with five rooms and bath. The broad open rafter cornice as here used is very popular, while the rough stone work chimneys and porch piers give a distinctive touch.

Bungalows

Two of these attractive little homes illustrated represent a very modest outlay of money; two are more expensive, being very carefully built and finished; the completed costs range from \$1,000 to \$3,000. The cozy charm of the bungalow style and its convenience—all the rooms being on one floor—is making a strong appeal to many northern as well as southern home builders.

A STURDY, independent little structure this is, suitable alike for summer and for winter use. There are five rooms and bath. The long living room, finished in rich weathered oak, with beam ceiling and wide cobble-stone fireplace, is delightful.



THE graceful lines of this simple bungalow join with the flowers and shrubbery to make a most inviting home. There are four large rooms and bath, also garage at the right. A partially enclosed court at the rear is arranged for an out-of-door summer living room.

THE Swiss gable is very popular in bungalow construction. It adds a pleasing touch to this well-built little cottage; and the dormier in the roof having similar lines, carries out the effect. The interior having five rooms and bath, would delight any house-wife.



Summer Houses

HOW SOME PLEASING RESULTS HAVE BEEN ATTAINED

By Herbert Franklin

AS THE country grows older the demand increases for arbors, summer houses, children's play houses, band stands, bird cotes, etc. A day's work with a camera in almost any section of the country will gather a whole lot of ideas along this line.

Fig. 1 shows a bird cote in a back yard, about 100 feet from the house. It is placed on the top of



1. Bird Cote and Virginia Creeper

a good stiff pole that is about sixteen feet high above the ground. Wires were originally hung from the corners of the little bird house reaching to the ground as a support for the Virginia creeper that covers it; presumably they are there yet, but the climber conceals them so effectually that it would be difficult to find them.

Fig. 2 is a small hexagon shaped band stand, sixteen feet in diameter. The posts are four by four pine, placed about eight feet apart, and boxed above the coping with seven-eighths finishing boards chamfered at the corners. A heavy joist extends across from one of these posts to the post opposite. The other joists, two by eight in size, are mitered into this main joist near the center. Below the floor are inch cross braces

eight inches wide, thoroughly well spiked into the four by fours and clinch nailed at the center crossings. A pair of such braces is placed between each two posts. In addition to this bracing the shape of the roof makes it very rigid and the roof is well tied to the posts and the plates. The rafters, plates and upper ends of the posts are all thoroughly well tied together to prevent the roof from lifting. The shape and the bracing make the structure very rigid in spite of its frail appearance.

Fig. 3 is a summer house built on the side lawn in connection with a residence in one of our prettiest towns. It is built entirely of rustic work with seats extending along the sides and a rustic table in the center. This little summer house is often used for afternoon teas, and it has been the setting for many a bon mot of interesting feminine gossip. In size it is about ten by twelve feet. It is built of cedar limbs and the stems of small cedar trees. About the only tools necessary are an ax and a hammer, but it requires good mechanical ingenuity to get the parts together so they look right and to brace the building gracefully from different directions.



2. For the Public Square



3. Rustic Work for the Side Lawn



4. Dedicated to Fishing and Fish Suppers

Figs. 4 and 5 are fishing shacks belonging to two different clubs which are composed of city business men, who go out to their respective club houses for fish suppers at night. There are no sleeping accommodations except for the steward and his wife who do the cooking, look after the boats and take care of things generally, during the summer months. Both these fishing shacks are temporary structures

built on valuable ground, so their removal is likely to be ordered at any time.

Fig. 6 is a very pretty summer cottage built in the woods along the shore of a large lake within an hour's ride by train from the business section of one of our large cities. The structure is a light frame covered with stucco plaster on metal lath. The principal at-



6. An Ideal Summer Home



5. The Home of a Fishing Club

tractions of this pretty little cottage are in the simple proportions combined with the arched doorway at the side, the artistic arrangement of the windows and the arched ends to the veranda. This neat little summer cottage is a very interesting example of simple architectural lines so blended as to form almost a perfect picture. Although not expensive in any particular it attracts a great deal of attention and favorable comment.



SURE OF HER GROUND

Mistress—"Jane, I saw the milkman kiss you this morning. In the future I will take the milk in."

Jane—"Twouldn't be no use, mum. He's promised never to kiss anybody but me."

Forethought in Building

VALUE OF APPROPRIATE DESIGN IN FACTORIES—THE WATER-FRONT PROBLEM CONSIDERED—FEATURES OF CITY AND COUNTRY BUILDING

By C. Bryant Schaefer

BUILDINGS of a utilitarian character and their location seldom receive proper artistic consideration. It seems as though the popular idea of art is an extravagance of millinery. It is not. The work of artistic design is to bring order out of con-

ting that is the most satisfying. Every laborer as well as every manager who strives in this direction becomes a party to producing artistic results.

Of all places, the water fronts of the country occasion the most criticism. Water traffic has to be pro-



DISREGARD OF BUILDING LINE.

fusion. Only the designer can take matters as they exist in a chaotic mess and organize them into system. The workman, the manufacturer and the contractor are more successful as they bring their operations into appropriate working order; so too, when such influence is extended to include the buildings and grounds

provided for. The convenience of transportation attracts all kinds of manufacturing. Hasty and inconsiderate location defeats the economical as well as the attractive interests of the locality. This is especially true of the small builders.

The carpenters and contractors concerned in commercial improvements are on the spot. They are best acquainted with the changes going on. Before it is too late they can make suggestions for better arrangement and more substantial construction. It is a part of their business to do so. They occupy a position by



A CHANCE FOR GOOD BUILDING DETAIL.

and their location; it not only assures greater business, but the result is clean, wholesome and attractive.

When a lot of industrial buildings are an eyesore to their whole neighborhood, and make undesirable



IN NEED OF SYSTEMATIC IMPROVEMENT.

alleys of the streets, it can be safely concluded that affairs are in bad shape.

There is a rough cleanliness that is necessary to good work. There is a workmanlike manner of build-

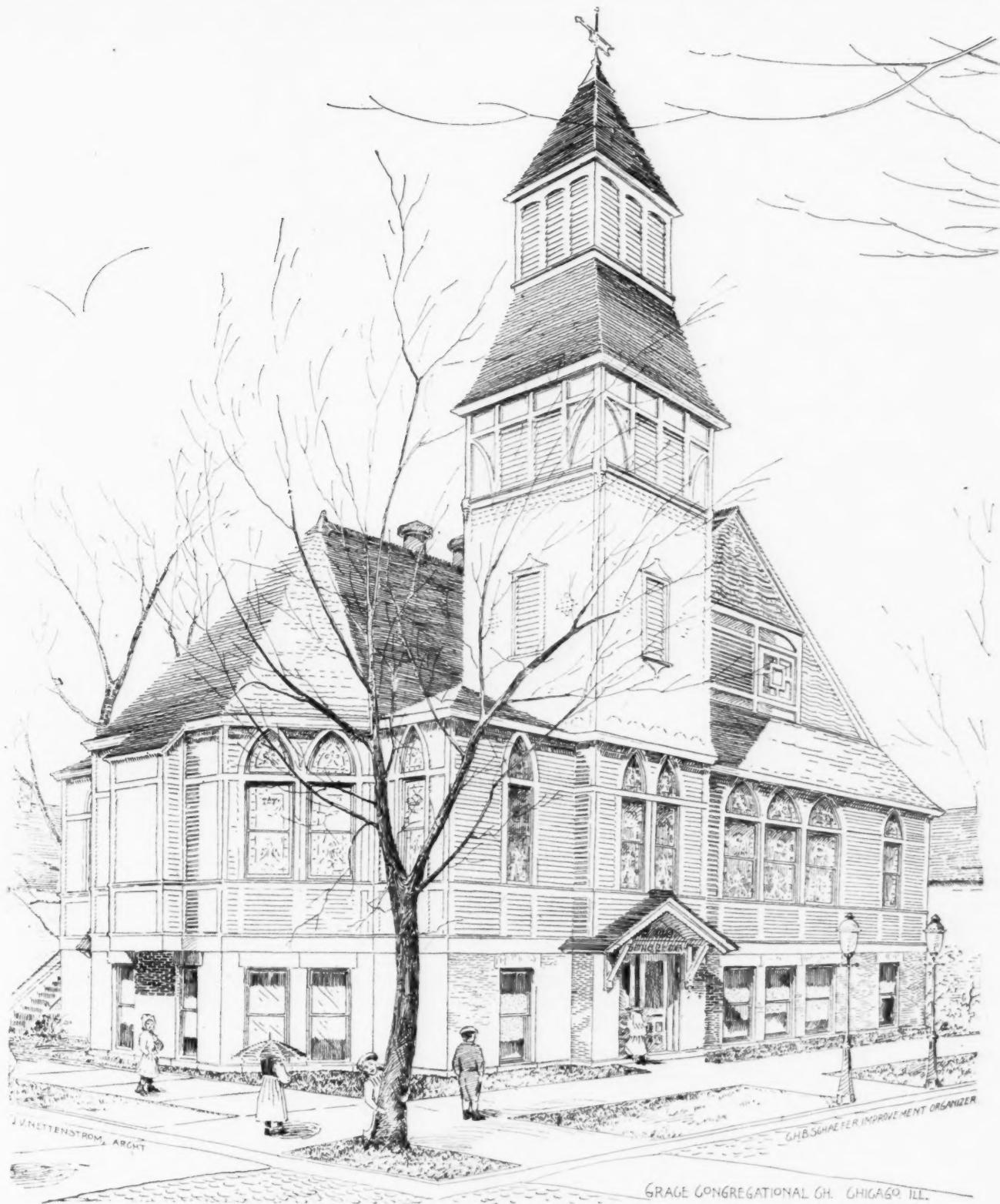
which it is possible to bring a great variety of enterprises into a harmony of building.

Among the little sketches of water fronts herewith is one on the Hudson river. It is usually the case that any improvement of importance attracts a lot of minor enterprises with temporary, makeshift and unworkmanlike quarters.

Then there is the Gloucester water front. It is not



ART TO BECOME MUSEUMS FOR UNWORKMANLIKE SHEDS.



the fishermen who should be bringing the wharves up to date, but the people habitually employed on shore. It seems to be a case of leaving the busy providers to inconvenient ways as long as they will toil.

The other water front shows where a great deal of pleasant recreation might be gained. The shores are free highways that should be improved along park lines in the interest of clean and wholesome recreation.

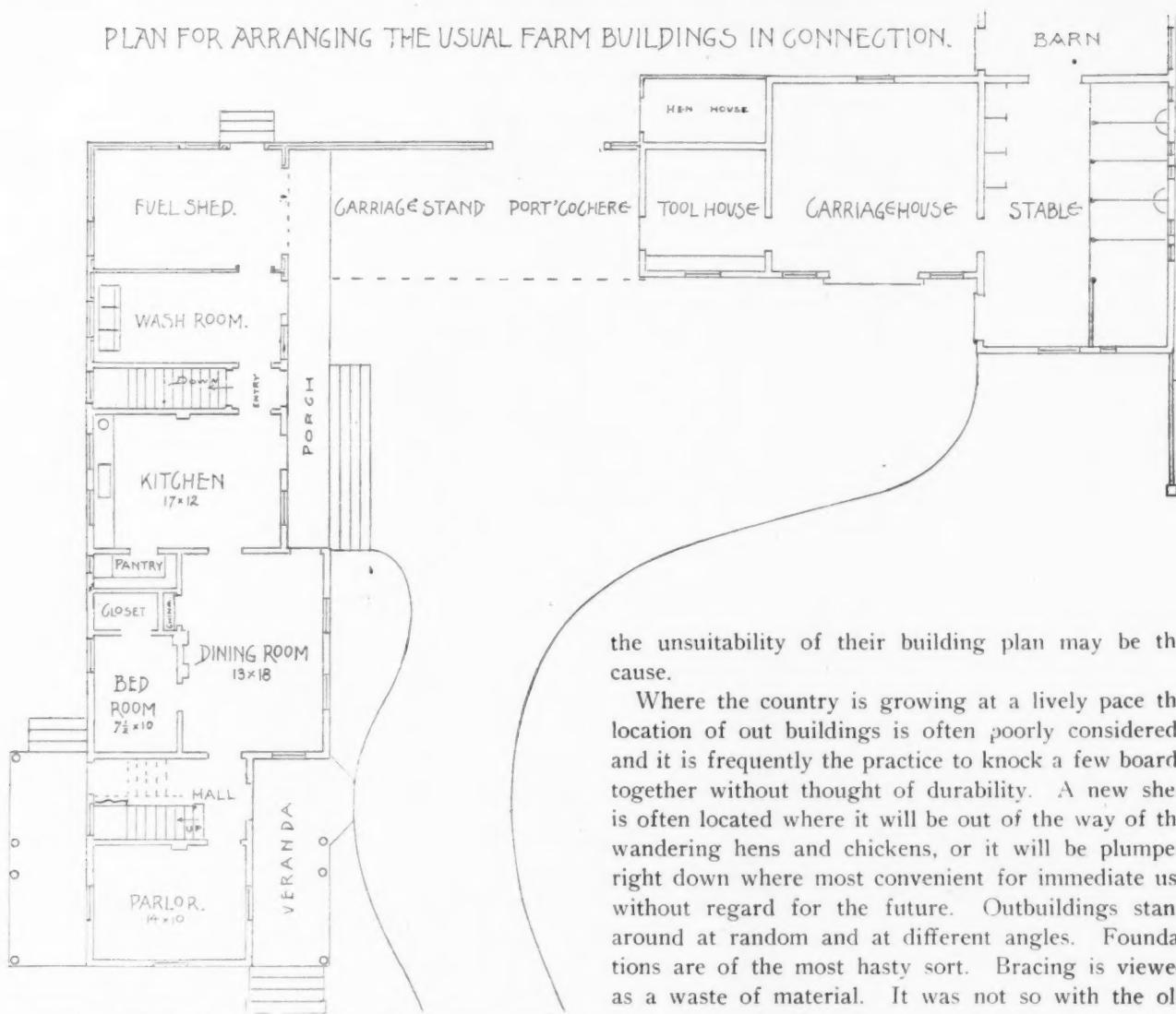
In the absence of foresight, street opening and

drainage grading are undertaken with extra expense at a later day.

The church illustrated was left below grade. It was raised and a brick basement built underneath; it was also altered to conform with modern building requirements.

In the street view the buildings were raised and attractive porches built. The building line should have been enforced; but the new building juts out,

PLAN FOR ARRANGING THE USUAL FARM BUILDINGS IN CONNECTION.



occupying all its front ground. It takes an unfair advantage of the reasonable position occupied by the older buildings, and becomes a permanent injury to the appearance of the street.

In modern city lots it is very difficult to secure pleasing variety. Where the lots are of uniform size the designs are bound to gravitate into like results. Occupants are forced into similar routine regardless of the varying tastes they wish to cultivate. People are often disappointed in their endeavors without realizing that

the unsuitability of their building plan may be the cause.

Where the country is growing at a lively pace the location of out buildings is often poorly considered; and it is frequently the practice to knock a few boards together without thought of durability. A new shed is often located where it will be out of the way of the wandering hens and chickens, or it will be plumped right down where most convenient for immediate use without regard for the future. Outbuildings stand around at random and at different angles. Foundations are of the most hasty sort. Bracing is viewed as a waste of material. It was not so with the old pioneer type in New England, of which an example is illustrated.

Their mode was to have all the outhouses connected with the main structure. It enables a builder to be saving of material without abandoning strength. The systematic grouping is desirable in cold weather or in the absence of hired help; it secures the greatest amount of shelter.

The plan and perspective shown represent this style in detail. Unlike the town dwelling, there is here no



VIEW OF FARM BUILDING ARRANGEMENT



effort at compactness, for which there is no need in the liberal country grounds.

The main building extends from the parlor to the kitchen and cellar stairs. The extensions back of that do not call for any more outlay than usual for summer

kitchens and sheds. The improved appearance secured adds immensely to the prosperous appearance of the property. It is a style well adapted to any form of building material; and will prove convenient and satisfactory for the farm home.

Shacks

HOW TO BUILD AND FURNISH A LOG CABIN FOR SOLID VACATION COMFORT IN AN OUTING CAMP

By **Herbert Shearer**

CARPENTERS are often called upon to build summer outing camps or shacks as they are often dubbed. Some of these little shacks provide sleeping quarters only, although in most cases some provision is wanted for cooking inside, especially on rainy days.

The most attractive looking shacks, and often the most comfortable ones, are made from logs after the fashion established by our great grandparents when the country was new. The roof may extend out in front to form the veranda,

or it may be a cheaper affair made with poles extending across the front and simply roofed with boards, but some kind of a porch is needed.

One feature necessary to make a log shack complete is a good solid chimney and a good big fireplace. The chimney should pass up through the peak of the roof at the gable end, because it is easier to make the roof raintight at the peak, and because the chimney looks better placed in that way. A shack may be built without a door or without a floor, but it



Built as Our Grandfathers Built Them

must have a roof that will shed the rain, and you must have a place to build a fire when it is too wet outdoors. People soon get tired of camp life if the roof leaks or the fire won't burn without filling the room with smoke. In fine weather you can live outdoors, but the weather usually takes on a freaky spell just after you



A Well Built Fire Place is Needed

get your summer togs unpacked and before the sun really smiles at you again in dead earnest you are obliged to put in a three-day siege under cover. It is at such times that you really and fully appreciate a good tight roof and a fireplace that knows how to fire.

These little log shacks are not necessarily very



A Vine Clad Cabin

large. The ones shown by the photographs are about ten by twelve feet. There is a bed in one corner, a cupboard for dishes in another corner, and there are a few boards laid overhead, making a sort of old-fashioned excuse for a loft, a place to hold extra camp

paraphernalia that you have no room for anywhere else. The cooking is done Indian fashion over an open fire, and for this reason a crane is necessary, which may be made at the nearest blacksmith shop; but irons for hanging it must be put in the brick or stone work when the chimney is being built.

Home-made furniture looks best in one of these log shacks, and a carpenter possessing a little originality may pick up a good many dollars making chairs, tables, desks, wall cabinets, lockers with hinged cover



The Roof Extends Out to Form a Veranda

to fit between the chimney and door, and many other little accessories which add so much comfort to a month's stay in the woods. Besides, such primitive furniture is so thoroughly in keeping with a little camp outfit of this kind that it adds a great deal to the charm of a summer outing. Millionaires may build castles and call them cottages, but they can never incorporate the home-made comfort that a poor man with his wife and babies finds in a little twelve-foot cabin built like this.

Effective

"Doctor, I want to thank you for your valuable medicine."

"It helped you, did it?" asked the doctor, very much pleased.

"It helped me wonderfully."

"How many bottles did you find it necessary to take?"

"Oh, I didn't take any of it. My uncle took one bottle, and I am his sole heir."

STEEL SQUARE

ALFRED W. WOODS

How to Use the Steel Square

SHOWING THE RELATION OF THE CUTS AND POSITIONS OF THE RAFTERS BY THE USE OF TRIANGLES AND HOW THE SAME APPLIES TO THE STEEL SQUARE

IN FORMER articles, we have shown many illustrations of how to use, and what may be accomplished by the aid of the steel square in framing all kinds of angles in building construction, many of which, we are aware, would never be considered prac-

The base represents the tangent or one-half of the length of the sides, as A-B in Figs. 183-4. The perpendicular represents the run of the common rafter, as B-C, and the hypotenuse represents the run of the hip, as A-C. These figures represent the plan for the square and octagon buildings. The hypotenuse and perpendicular in the former rest at an angle of 45 and in the latter at $22\frac{1}{2}$ degrees. The hexagon would be at 30 degrees and so on to the end, each equal-sided or regular polygonal building having an angle in degrees that is readily arrived at as illustrated and described a number of times in former articles; therefore, we will not take space to repeat it here.

Knowing these angles and the figures to use on the steel square to obtain them, the operator can instantly apply the square for correct results. In the irregular, or where the roof contains different pitches, then the

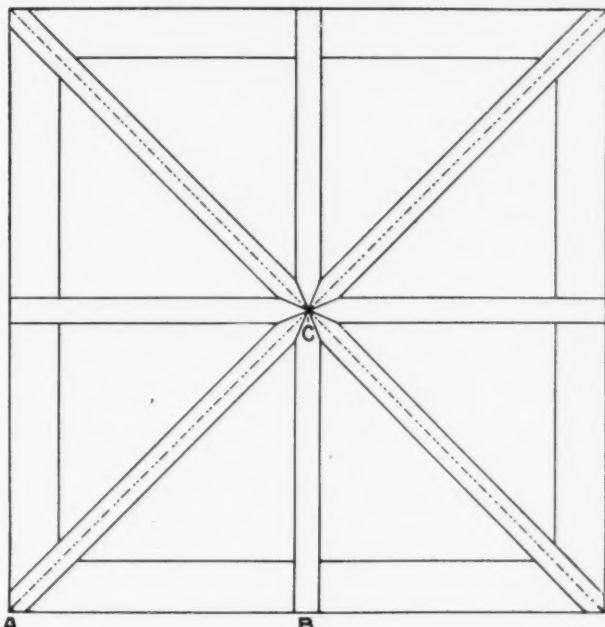


FIG. 183.

tical because of the little demand for their use, but the principle involved remains the same and applies to all angles alike.

The whole subject is solvable with the right angle triangle from which it has its beginning and ending. The cuts, the shape of the building and the rafters themselves, together with the run and rise, form the triangle. This is where the usefulness of the steel square comes in as an aid in helping to solve these problems. The blade and tongue being at right angles to each other, furnish two sides of the angle—i. e., base and perpendicular; the third, hypotenuse, is furnished by taking a diagonal line from one arm of the square to the other. This is furnished by applying the square to the straight edge of the timber at the required angle to obtain the cuts; the hypotenuse being changeable as to its position with the base and perpendicular according to the cut desired. Taking these parts for the plan layout, they are as follows:

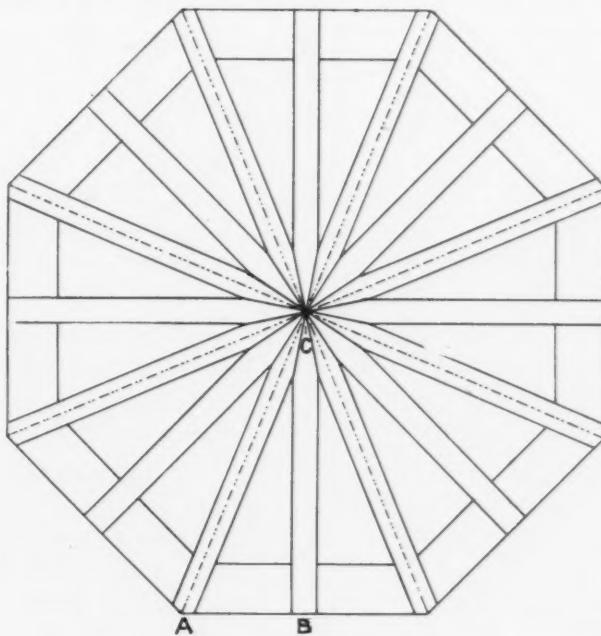


FIG. 184.

figures to use are not so easily understood and require a special calculation. In most cases, it is better to lay off a scale diagram of the plan to find the measurements.

The position of the rafter when in place in relation to its run and rise forms a triangle as follows:

The base represents the run; the perpendicular the

rise, and the hypotenuse the rafter itself. The corresponding cuts for the rafters, as mentioned before, are also obtained by a triangle whose proportions partake of the triangles that go to form the plan and

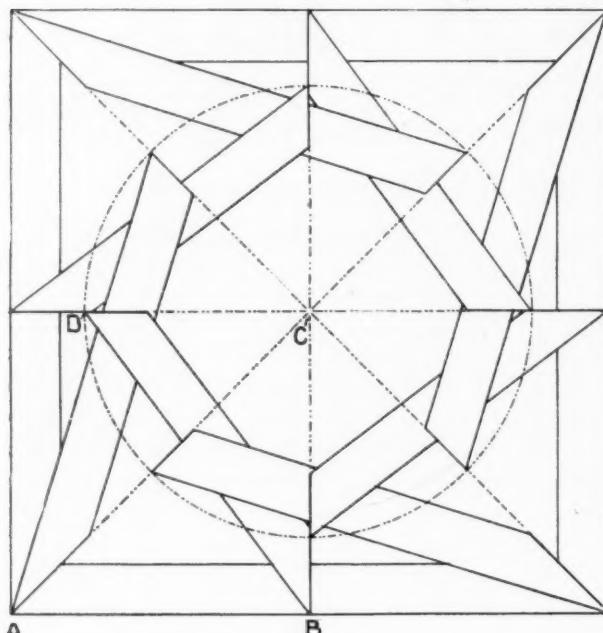


FIG. 185.

position of the rafter as above described. The cut itself and the edge of the timber from which the cut is reckoned, forms two parts of the triangle, as follows:

The seat cut of the rafter is formed by the hypothe-

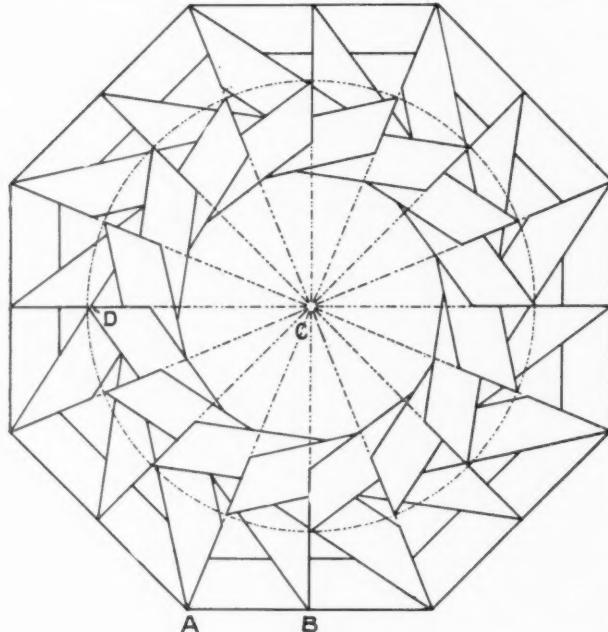


FIG. 186.

nuse and base, with cut on the latter. The plumb cut by the hypotenuse and perpendicular with cut on the latter.

The side cut of the jack is formed from the triangle whose measurements are based on the proportions of the triangle that forms the plan, as shown in Figs.

183-4, and the one as above mentioned in connection with the common rafter and hips are as follows:

A-B (the tangent) represents the base and B-C (the length of the common rafter) the perpendicular; cut on the latter. When these proportions are taken on the tongue and blade of the square, the cut will be found on the latter. The perpendicular and the edge of the rafter will be to it as the hypotenuse to the angle.

This also applies to the side cut of the hip; the proportions being taken from the triangles that represent its parts the same as described above for the side cut of the jack.

Geometrical Figures in Roof Framing

Now that we have explained the angles for the individual rafter, we will go a little further and show them in connection with the plan under different conditions.

In Fig. 183-4 they are shown in the plan as men-

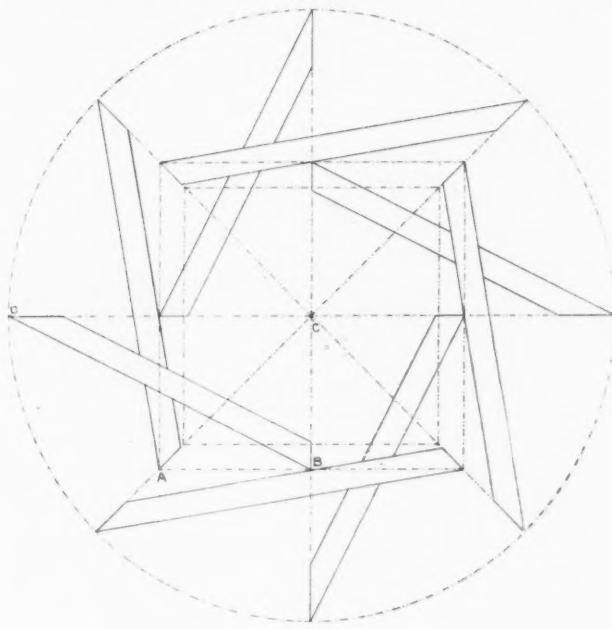


FIG. 187.

tioned before for the square and octagon building, but only those for the common rafter and hips are shown. The view point is from above looking straight down and in that case the rafters are shown in their place, but there is nothing in this to indicate the pitch, so we will refer to Fig. 185 and 186. Here are the same plans, but showing the second set of angles, i. e., the triangle, of which the hypotenuse represents the rafter. The pitch is one-third and the rafters are represented as if they were lying down with the foot of each resting in its proper place and the upper end at an equal distance from the center, which is governed by the rise given the rafters. Now just imagine that we could take hold of the upper end of the rafters and raise them up till they rest over the dotted lines, they would all be resting in their respective places and show the same as in Figs. 183-4. Thus it will be seen that the subject of roof framing furnishes an interesting study. The least change in the rise

changes the cuts and for that reason complicates the work in the minds of many good mechanics.

If the pitch be $\frac{1}{2}$, then the upper ends of the common rafters would intersect the outer line of the plate

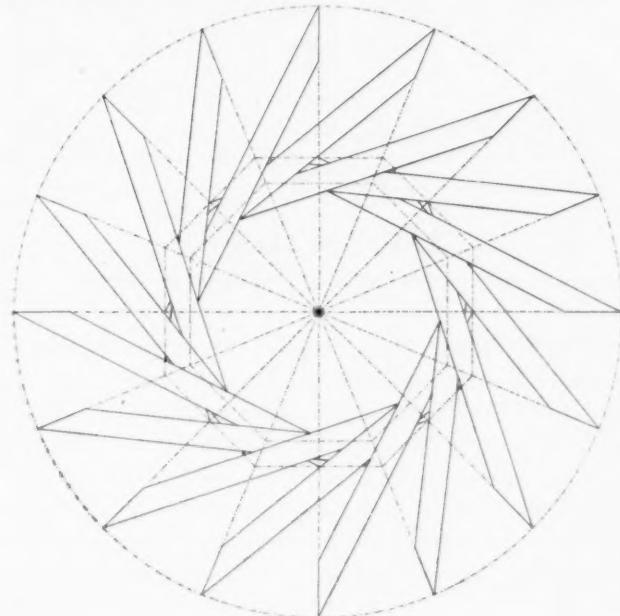


FIG. 188

when shown under like conditions, as in Fig. 185-6. Thus, when the pitch is less than $\frac{1}{2}$, the layout of the rafters will fall inside and when over $\frac{1}{2}$, they will fall outside of the plate lines, as shown in Figs. 187-8. Here the pitch is represented to be full, or 24 inches rise to the foot. The radius of the dotted circle represents the rise. If we could raise the rafters as mentioned in the previous figures, their points would all come to a common center and would show the same as the first figures given in connection with this article.



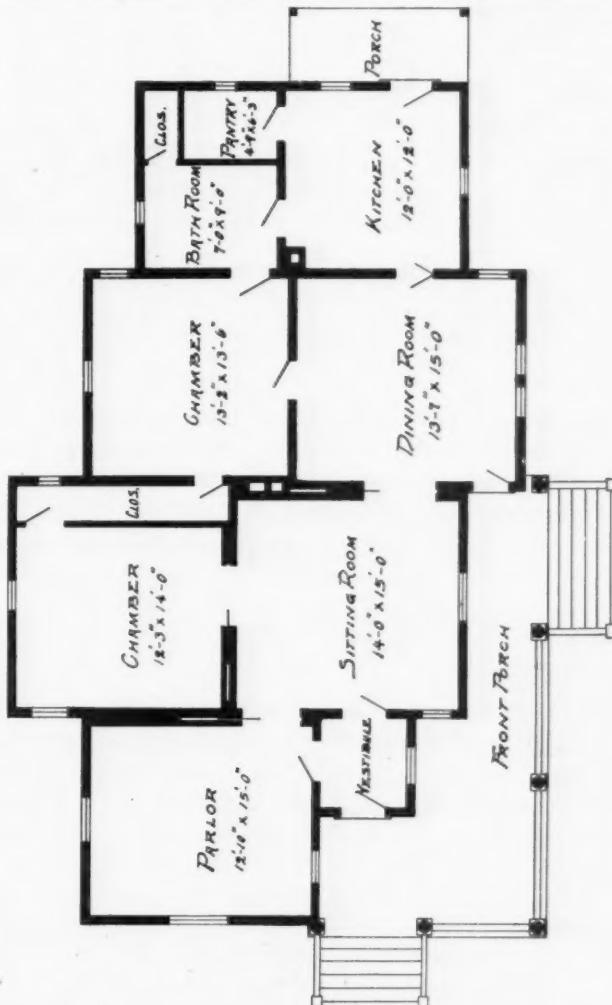
A Neat Well Built Cottage

The six-room cottage illustrated herewith was planned and built by C. E. Spaulding at Centralia, Ill. It will appeal to many because of its convenient arrangement and substantial construction. There is a good basement under the entire house, the foundation walls being of concrete block. Furnace flues were built



A Substantial Cottage Built by C. E. Spaulding, Centralia, Ill.

so that a heating plant may be easily installed at any time. The floor plan gives a good idea of the size and arrangement of the rooms. The interior finish is



yellow pine in the natural colors. The cost in 1907, complete with bath, hot and cold water systems and gas, was \$2,350.



Emery

All the emery used in the world comes from the little island of Naxos, near Greece. As it is one of the hardest substances known, the ordinary quarrying tools cannot be used to cut it out.



A Mistake

Client.—"Didn't you make a mistake in going into law instead of the army?"

Lawyer—"Why?"

"By the way you charge there would be little left of the enemy."



"We Will Put Your Name on File"

The Needy One—"I say, old man, could you lend me a dollar for a day or two?"

The Other One—"My dear fellow, the dollar I lend is out at present, and I've several names down for it when it comes back."—*Harper's Weekly*.

PRACTICAL CARPENTRY

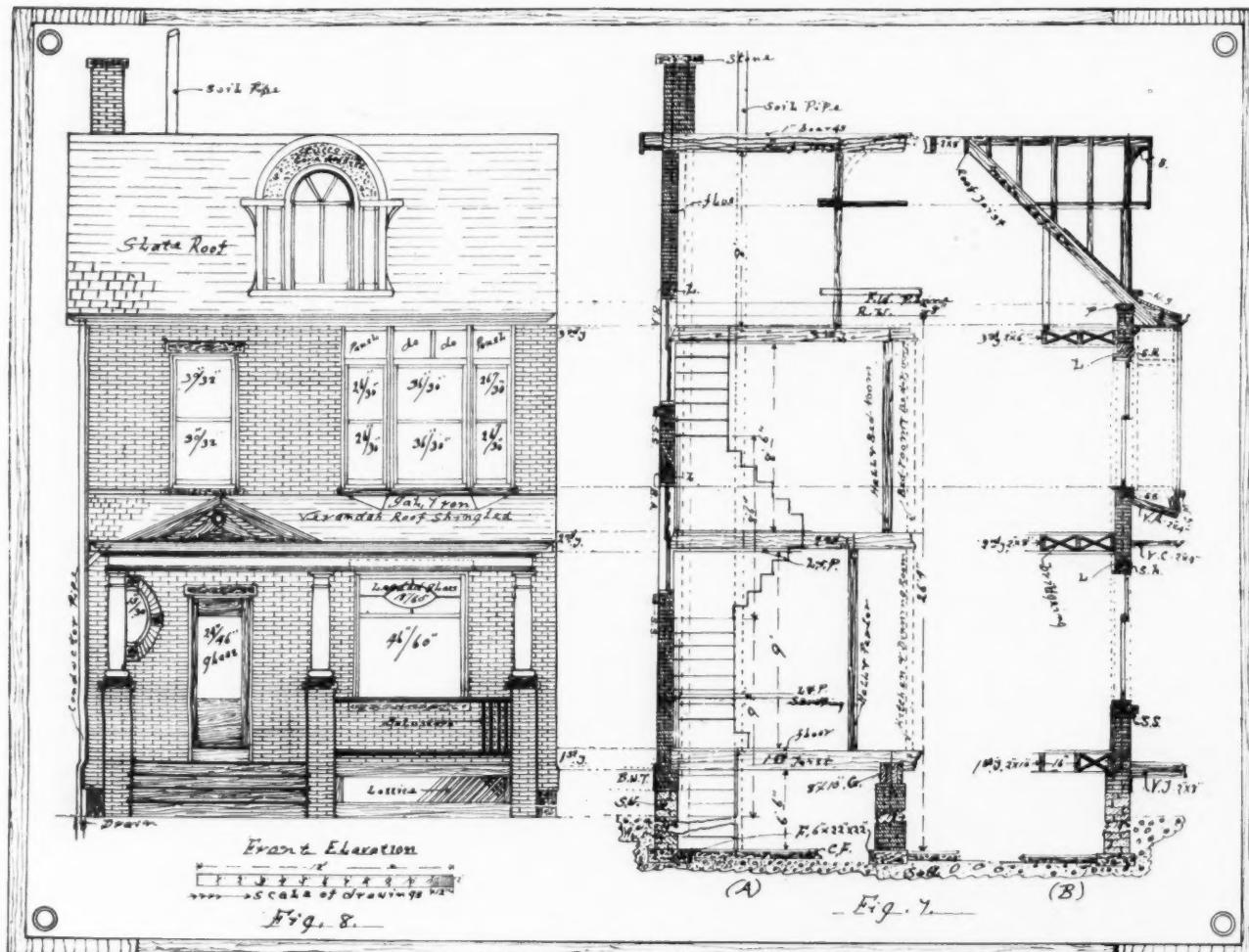
How to Make and Read Drawings

BEING THE FOURTH OF A SERIES OF ARTICLES ON MAKING AND READING DRAWINGS FOR A BUILDING—SECTIONS AND FRONT ELEVATION SHOWN

By Wm. C. A. Stevenson

AT THE conclusion of the last article, we finished with the different plans; we will now take up the sections and elevations. At Fig. 7, (A) and (B) is shown two different sections. At (A) we have the section of the side wall, which shows the wall from the basement to top of chimney;

floor 8 feet 6 inches, the attic 8 feet. The main stairs and the stairs to the attic are outlined here in an upright position showing the room they take up. The chimney and soil pipe are shown by the dotted lines where they come down through the building. The windows over the stair landings are seen here in sec-



F shows concrete footing; C F cement floor; S W, stone wall. It will be seen here that we have not shown the full height of stone wall, it being broken into with the zigzag lines. We have also dimensioned the height of each floor as will be seen, the basement 6 feet 6 inches, the ground floor ceiling 9 feet, first

floor, showing the stone sills S S, the brick arch B A over the window, and the wood lintel behind the arch at L. The roof joist is seen extending over the wall to form the cornice. B W T shows the brick water-table, which forms a projection over the stone foundation wall. At G is shown the 8 by 10 girder on top

of brick pier in basement to support the first joist, showing how the joist is to be cut over it so as to provide for headroom in the basement; note the line showing the strapping on the wall; L P P shows the lath and plaster lines.

The partitions between the hall and parlor, on the ground floor, and the hall and bed rooms on the first floor, are shown as they support the joist. Since the partitions between the dining room and kitchen, and bed rooms on the first floor do not run all the way to the back of the house, they are shown by the dotted lines; these also support the joist. In the attic is shown the partition that supports the roof joist, and comes at one side of the circle top window, as will be seen by referring to the attic and roof plan at Fig. 6, in article number 3. It will be noticed here that the front wall of building is 8 inches higher than the rear wall as seen by the lines F W and R W—this is done in order to get the wide projection of the roof in the front and not drop too low over the bay window.

The dotted lines show the form of the circle top window. We will deal with this in detail later on.

At (B) is shown the section of the building cut into through the front wall. In this view, instead of looking at the side of joist, we look at the end view. We see the section of the large front window and the smaller one above on the first floor, also the outline of the bay window, showing how it stops under the projection of the main roof. V J shows a portion of the veranda joist, V C veranda ceiling, V R veranda roof, S S stone sills of windows, S H stone heads of windows—as in the front, we are putting in stone heads instead of the brick arches, over the windows. L shows the wood lintel over the large bay window opening to support the brick wall above. P is the wall plate, showing the main rafter cut over it and stopping at the roof joist; and the piece B, planted on top of the main rafter at the bottom to form the projection of roof and the bellcast in the roof. W S shows the wood sills under the bay win-

dow and the circle window in roof. C S shows the cove soffit of the circle top window.

A great deal more might have been shown on this section but I do not consider it wise to confuse the reader with too many lines at a time. At Fig. 8 is shown the front elevation. Now by drawing the section first you can project the main points, such as floor lines, etc., over to the elevation, as seen by the broken and dotted lines, and save considerable measuring. Although these lines are not shown on the elevation it is necessary to have them in order to establish the proper places for the openings, etc. The windows must be placed in the proper place between the floors and the cornice lines must be shown in the proper place. The first to be done in drawing the elevation is to outline the outside of it, then get all the objects outlined in their proper places, starting with those that are in front, in this case the brick piers of the veranda, the steps, lattice work, hand rails, columns, veranda roof, etc. After all of the first appearing objects have been drawn, fill in whatever can be seen of the wall proper.

Always take care that your windows, doors, etc., are shown in the elevations in the same position as in the plans; unless your plans will all work together they are useless. This is a point to be carefully watched. It is proper to mark all the sizes of glass on the windows. When drawing plans to a small scale it is not required to show working details on the plans, in fact it is not possible to do so; full size or half size details are made of the cornices, frames, stairs, veranda, cupboards, etc., in order that a proper conception of what is required can be gained from them. These details will be taken up later on.

I have shown on these drawings indication letters that would not be shown on drawings made for working purposes, being shown here in order to indicate each part so that the reader can get the idea more clearly. In the next issue we will show the side and rear elevations.

Proper Furnace Installation

BLUNDERS IN BUILDING WHICH ARE COSTLY AND A SOURCE OF INCONVENIENCE—PROPER METHOD OF HEATING AND VENTILATING

By I. P. Hicks

THE first question we wish to take up in this article is in regard to laying out the framing of a house for the convenience of cutting the openings for furnace pipes. Many houses are heated with the warm air furnace, which makes it necessary for openings to be cut through floors and partitions to accommodate the pipes. Now, when a contractor has a house to build that is to be heated with a furnace, the first thing he should do is to properly locate all the registers on the plans, if they have not been located by the architect. Some architects leave the location of the registers to the furnace contractor, but

a competent architect can locate the pipes and outlets for furnace heating to just as good advantage as the furnace contractor, and in making plans the architect should locate the place for registers and everything pertaining to the heating of the house.

When the contractor lays out the joists and partitions he should see that the joists on the floor above are directly over the lower ones, and that the studding are directly under the joists and in line with them, see Fig. 1. When this is done there is no trouble in cutting the openings for the pipes and registers. On the other hand, if this is not done, and the studding

and joists are put in without any regard to furnace pipes, then the contractor will find his troubles begin to multiply as soon as he begins to cut for the furnace pipes. He will find studding that must be moved; he will find joists that must be moved or cut into and headers put in; all this will consume three or four times as much time as will be required to cut the openings where a little care is exercised in spacing and setting the joists and partitions. The time taken to set the partitions to accommodate the pipes is practically nothing. We have heard a contractor state that he would take a contract for a house heated with hot water or steam for fifty dollars less than he would if heated

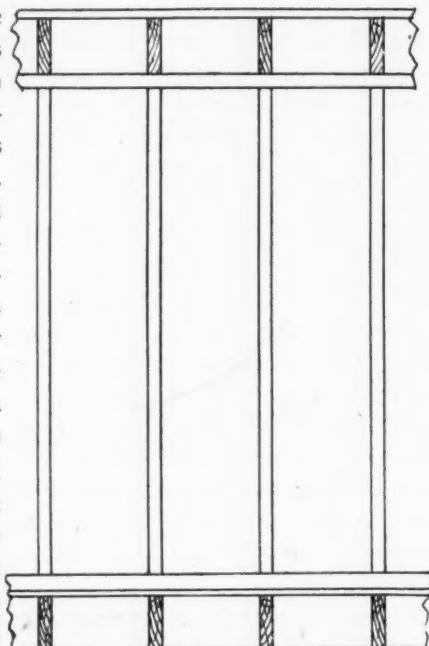


FIG. 1.

with a warm air furnace, because of the immense amount of cutting the furnace work requires. We consider the above statement not well founded; a contractor with such an opinion surely does not properly lay out the framing of the house, if such has been his experience. Let us lay out the house and we will agree to do all the cutting for the furnace pipes for five dollars. No man should be over one day cutting for furnace pipes in the average residence, and in some cases half this time would be plenty. The way to cut for furnace pipes is to have every pipe located and have one man, skilled in this kind of work, do the cutting; then when he starts to cut let him keep at it till the job is completed.

It is a great loss of time for a contractor to take men haphazard to do this work, calling a man away from his usual work at various times to cut for the furnace man as he happens to want it. All the cutting should be done at one time, in advance of the furnace man, by someone who understands it. Working here and there and cutting for furnace pipes by piece-meal does not pay.

If a contractor has the cutting to do for steam or hot water heating, he finds that there is no great amount of difference between cutting for steam or hot water heating and in cutting for the furnace, if some care is taken in setting joists and partitions.

Fig. 2 shows how studding and joists should be laid out on sills and girders where they lap by one another to keep them in line across the building. The

studding on one sill are set the thickness of the studding to one side of the studding on the opposite sill. Then when the joists are placed they can be lapped on the girder in the center, and each tier of joists will line up square across the building. How often we see joists put in lapped on a girder or partition, and scarcely a joist in the entire floor is square with the building. This frequently makes it bad in setting partitions that run parallel with the joists and sometimes makes extra cutting necessary.

It pays to be a little particular and exact in laying out work, the little extra time it takes is a mere nothing, while its advantages are very great and are apparent everywhere about a building laid out by a competent man who looks ahead a little in his work. The old saying, "Never cross a bridge till you come to it," may be handy for people to say at times, but be sure the bridge is there when you want it; it saves trouble.

We wish next to impress upon the minds of people the importance of good chimneys and some means of proper ventilation.

As the price of brick and bricklayers' wages are now unusually high, it makes the average house chimney run up to a high figure; consequently many people try to economize in chimney construction much to the detriment of the heating and ventilation system of the building. There are many six and seven room houses being built in Omaha with only one 8 by 12 single flue chimney, which is expected to take care of the heating plant, the kitchen range and a laundry stove in the cellar, making three separate pipes to enter a single 8 by 12 flue chimney. A chimney of this kind may work, and then again it may be very unsatisfactory. If it does fail there is no remedy except to build another chimney in some other corner of the house; and sometimes there is no available space. It is surely false economy to build this kind

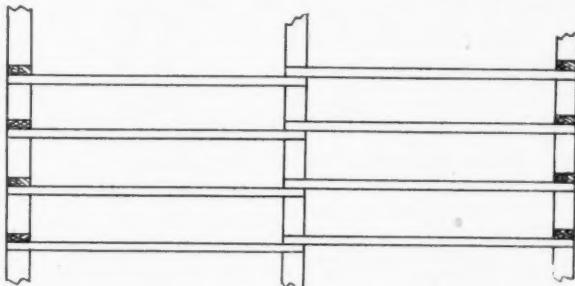


FIG. 2.

of a chimney—the chances are that there will not be sufficient draft to operate the laundry stove, the kitchen range and the heating plant; and the efficiency of one, or perhaps all, will be greatly impaired. Fig. 3 shows the comparative size of the ordinary 8 by 12 flue chimney; the average cost of construction is \$1.00 per lineal foot. With a chimney of this kind there is no system of ventilation, a thing that is being greatly overlooked even in the better class buildings.

Fig. 4 shows a 12 by 12 flue chimney, which is none too large for operating a laundry stove, kitchen range and the heating plant. This is a flue that will furnish

the necessary draft and can be depended upon to do the work required of it. Its cost is \$1.20 to \$1.25 per lineal foot. This chimney, like the one previously described, does not carry with it any means of ventilation.

Fig. 5 shows a chimney with a 12 by 12 flue to take care of the smoke from the heating plant, laundry stove and kitchen range, and an 8 by 12 flue for ventilation purposes. There is no doubt at all that every house should have at least one ventilating flue and it should be 12 by 12; still an 8 by 12 is better than none at all. When buildings are heated with a furnace, there should be a ventilating flue, to which a proper size ventilating pipe from each room should connect. The air comes into a room heated from a furnace and must displace the same volume of cold air that is in the room. This cold air must have some way to get out to make room for the incoming warm air. For the sake of saving a few dollars, no provision is now being made to properly take care of the cold, foul air, or to provide a way for its escape from the room; it is left for the warm air to force it out through little cracks under and around doors and windows. This is wrong; a way should be provided for the cold air to escape, and it should go into the ventilating flue, part of it at least. This purifies the air and the air that comes from the furnace is freshly heated pure air.

Some take the dead air from the rooms and return it to the furnace to be continually heated over and over again and sent back to the rooms, claiming that it takes less fuel to heat the air because it is not so cold as the air from the outside air duct would be. This looks plausible on the face of it, but we have had experience with outside air ducts and with inside air ducts, and we will take the outside air duct; for, as a rule, the inside air duct does not furnish sufficient air, and if the furnace does not get the air, it surely can not heat it, nor deliver it to the rooms when wanted. Ample air supply should always be provided; if too much, part of it can be shut off, but if the supply is insufficient it is difficult to remedy the defect. No matter how cold the air is, the furnace will heat better with plenty of air supply than it will with an insufficient amount of half heated air; and the cost in the heating will be no greater.

How about steam and hot water heat? As installed in the ordinary residence at the present time, there is no system whatever of ventilation—they simply heat continuously the same air that is in the room from morning till night and from day to day, except what

little fresh air gets in through windows and door cracks. This is a fact and it is only in school houses or some government buildings that any system of ventilation is provided for with steam or hot water heat. In these buildings ventilation is provided for because it has to be; but in the residence the radiators are placed near or under a window—and they call it a system of ventilation.

In a flue there is a continual, natural upward draft; and this flue, if properly connected with ventilation pipes from the different rooms, will remove the foul air from the rooms connected with it in proportion to the size of the flue and of the rooms with which it connects. No matter what system of heating is installed, some ventilation should be provided for; this matter should not be left to take care of itself.

In the time of our forefathers, when mammoth fireplaces were in every house, and when houses were not nearly as tightly built as now, people lived longer and with less sickness than at the present. There were not as many weak and frail and puny people as now. Why? Those old fireplaces afforded ventilation and it took bone and muscle to keep them supplied with fuel. This manual exercise developed strength and health. Air tight boxes to live in, with no ventilation, and idleness develops a race of puny, sickly people.

Fig. 6 shows another form of chimney which has two 8 by 12 flues and a 12 by 12 ventilation flue. In this, one 8 by 12 flue is designed for the laundry stove and the kitchen range, the other 8 by 12 flue exclusively for the heater, and the 12 by 12 flue for the ventilator.

Fig. 7 is another form with ventilating flue 8 by 20. Chimneys do not necessarily need to be after these particular patterns, but to be right should have an adequate flue for ventilation purposes, a flue exclusively for the heater and one for the stoves. Too much economy in building flues is detrimental to the heating and ventilating proposition.

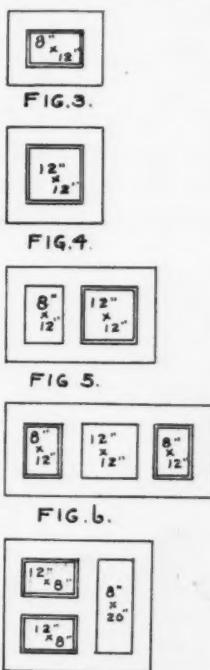


FIG. 7.

Noiseless Room Under House

In a house in Riverside Drive, New York City, there is one noise proof room. It is hewn out of solid rock under the house, and its roof and entrances are so arranged that no noise can reach the occupants. The room was built to gratify the owner's love of quiet while playing chess. Every week leading players of the city meet there. It is said that hardly the sound of the heaviest thunder reaches the ears of the occupants of this silent room.



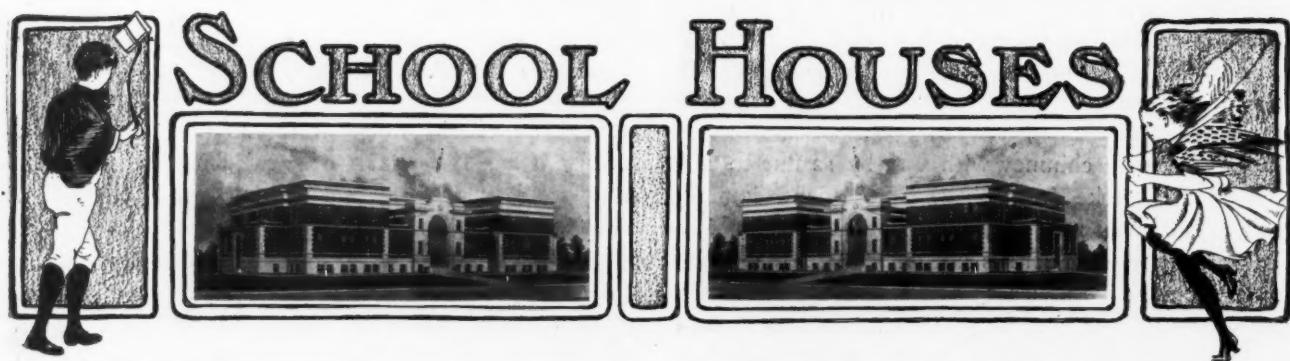
Wasted Caution

Church—"What's that piece of cord tied around your finger for?"

Gotham—"My wife put it there to remind me to mail her letter."

"And did you mail it?"

"No; she forgot to give it to me!"

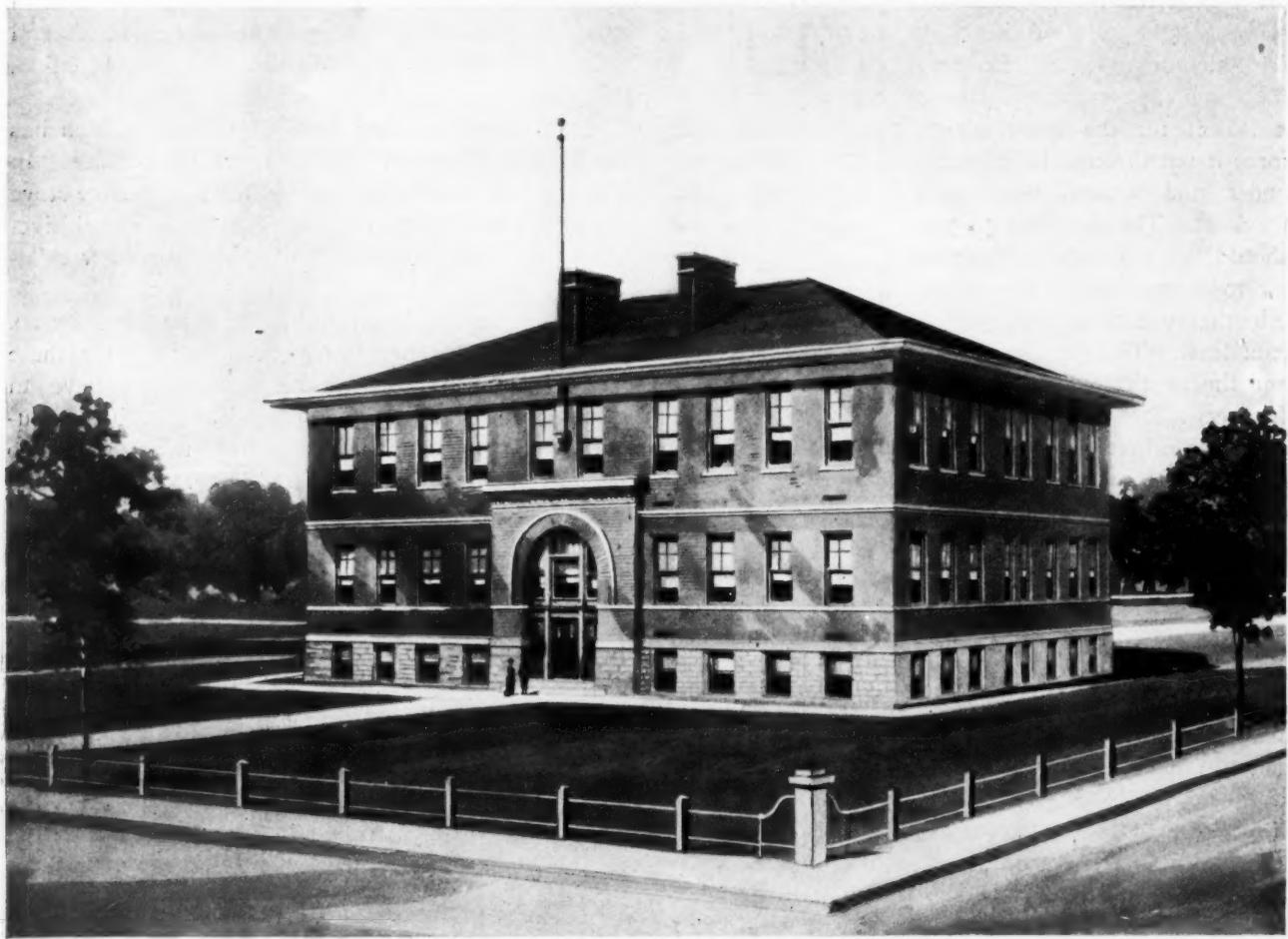


School House Built for Special Needs

PERSPECTIVE AND PLANS OF A WELL ARRANGED SCHOOL BUILDING—SOME DESIRABLE FEATURES
POINTED OUT

IN DESIGNING a public school building the first thing to consider and to bear in mind all the way through is the special need or requirement of the particular locality where it is to be built. This has

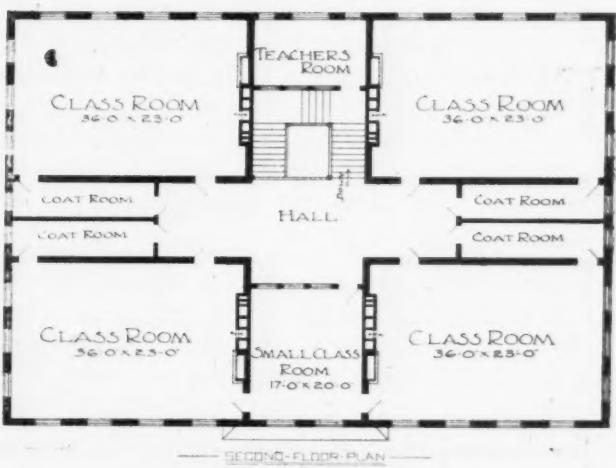
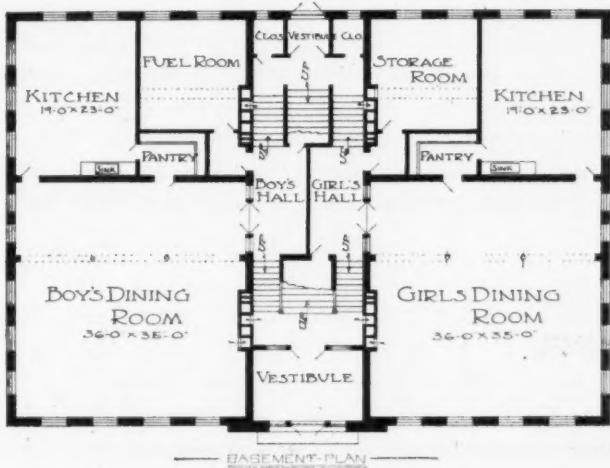
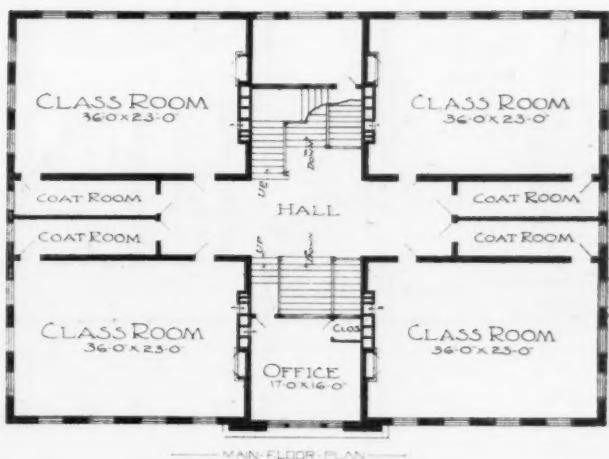
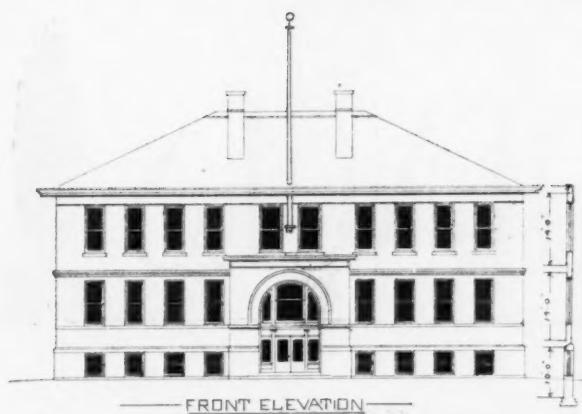
excellent part of this design, the large and airy dining rooms, with attached kitchens, in the basement. Wherever pupils are obliged to come from quite a distance, as in this case, this feature is to be recommended.



been done in a most admirable manner by G. W. Ashby in planning the eight-room school building shown herewith. Its location is in a southern state where the heating question is not a serious one. The expensive basement furnace system has accordingly been omitted. This has made possible a very

The exterior is plain and simple, yet pleasing; the interior is so arranged that all the rooms are large and easily accessible. It is a school house design giving maximum conveniences at minimum structural cost.

The front elevation and the basement, main and second floor plans are given on the following page.



Buyers' Club Building for St. Louis

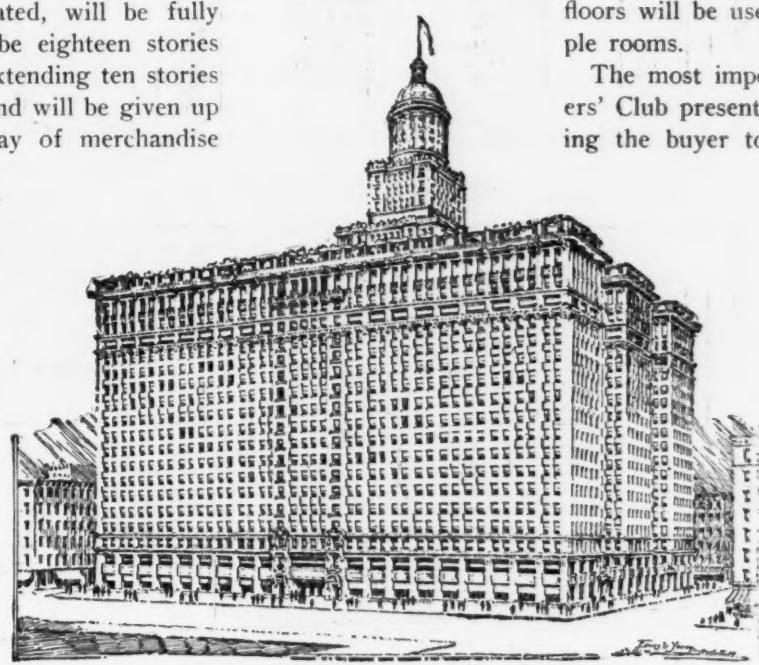
A new type of business building is under way in St. Louis which presents many practical features never before carried out on such a large scale, and others of perhaps equal value which have never been utilized anywhere before.

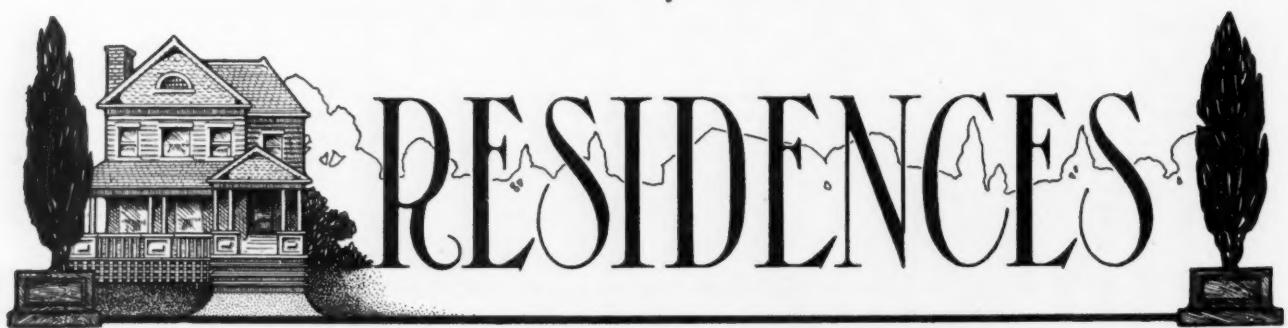
It is to be called the "Buyers' Club Building," and its cost, it is estimated, will be fully \$4,000,000. It will be eighteen stories high, with a tower extending ten stories above the building, and will be given up entirely to the display of merchandise with the exception of the top floor, which is to be sumptuously furnished for club purposes exclusively for visiting buyers, convention delegates, etc., and the tower, which will contain offices. The club floor will comprise a convention hall with committee rooms, etc., the use of which will be given free, to-

gether with all the club privileges, to all visiting buyers and to conventions where the delegates are in a position to buy goods or influence their purchase.

The first floor will be devoted to general display, demonstration and advertising purposes. The basement to demonstrating machinery, engines, tools, etc., with provisions for power of every nature. Sixteen floors will be used exclusively for sample rooms.

The most important feature the Buyers' Club presents is the plan for bringing the buyer to the seller. The fare of 10,000 buyers will be paid to St. Louis annually by the building company, and the exhibitors will choose the buyers who are to be brought. Special trains will be hired by the company and run from distant points where dealers from a considerable radius can be gathered and brought to St. Louis.





Practical Artistic Residences

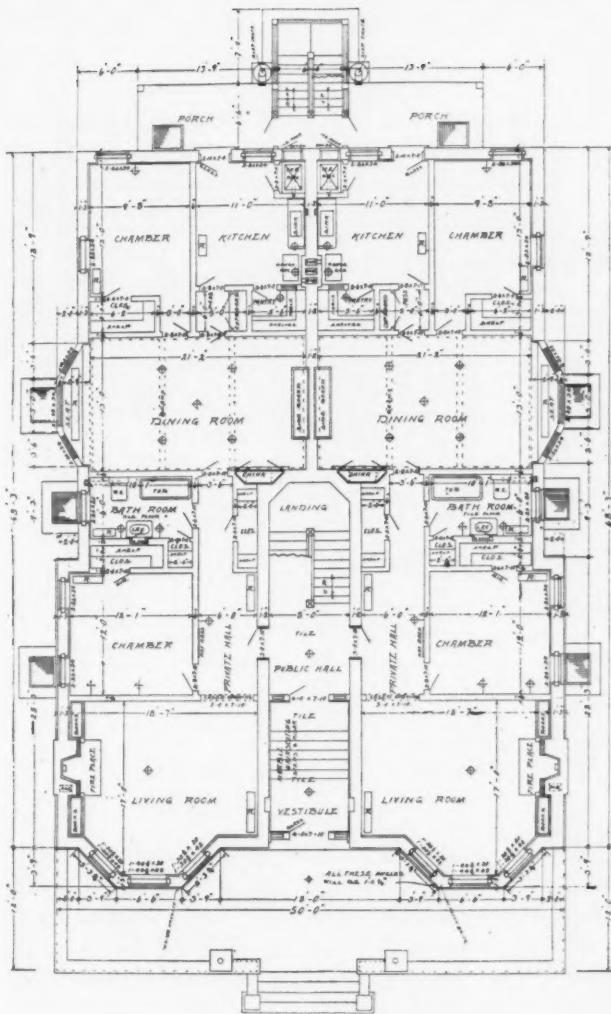
PERSPECTIVE AND FLOOR PLANS OF SEVERAL ATTRACTIVE HOUSES—ARRANGEMENT MATERIAL AND COST—FULL WORKING DRAWINGS OF A MODERN FLAT BUILDING

THE popularity and use of the flat building is no longer confined to the large cities. Its advantages as a profitable investment to the builder are just as great in the smaller cities; and, as a place of residence, it can be made even more attractive and

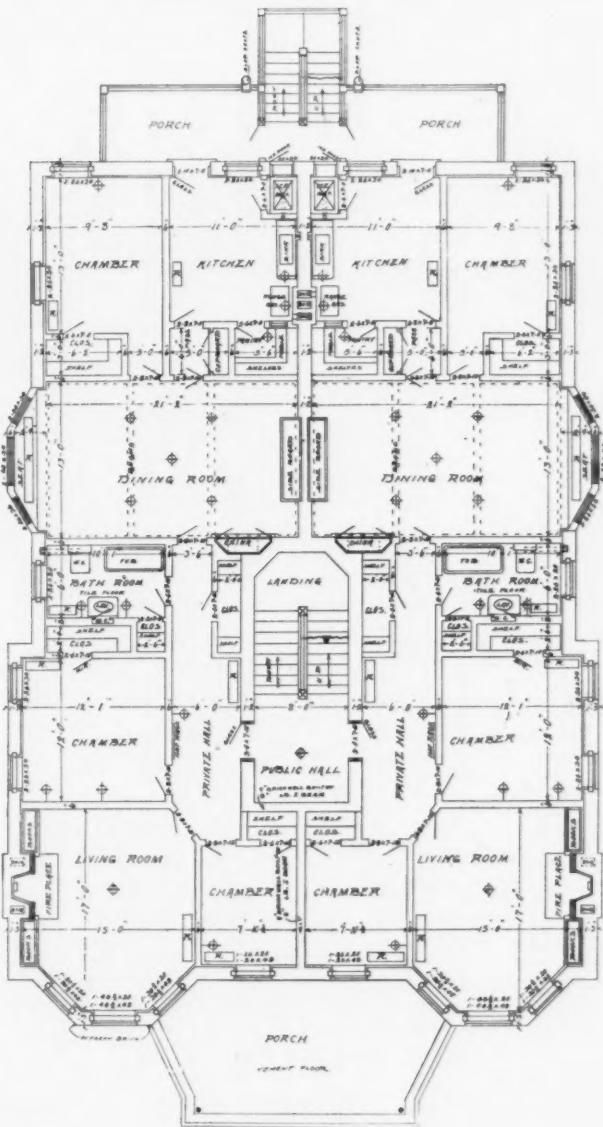
desirable there, since the nature of the surrounding property usually makes possible a free exposure with windows on three sides of each apartment. It is in response to requests from a number of builders in our smaller cities we are showing herewith the full work-



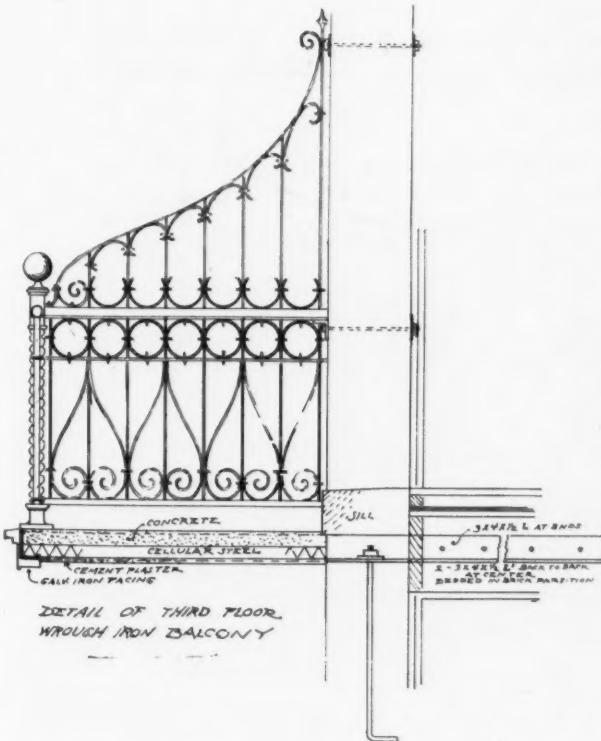
A Modern Flat Building—Front Elevation



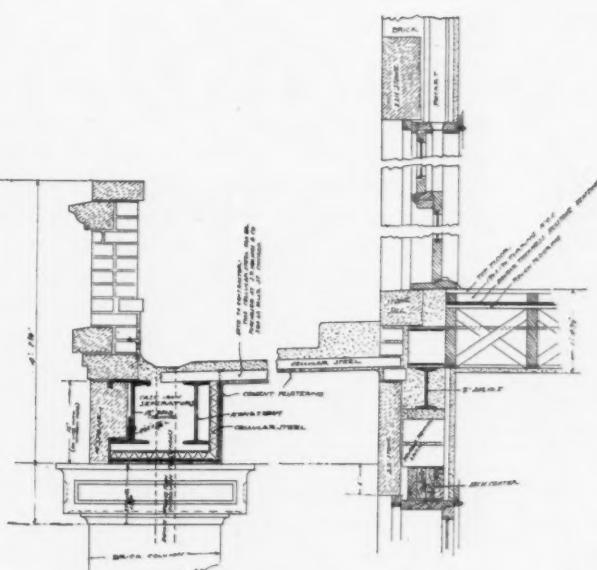
First Floor Plan



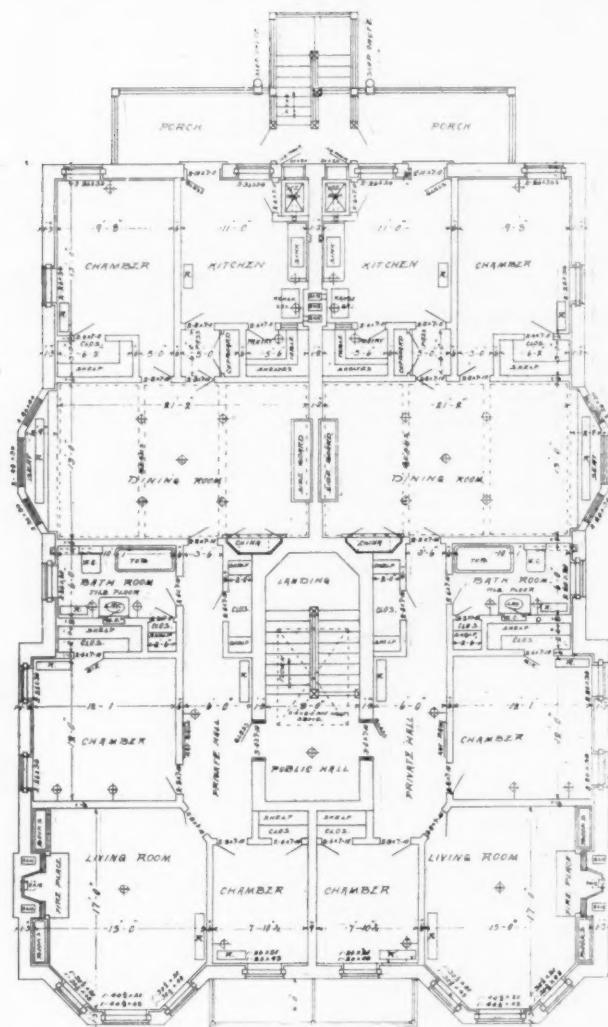
Second Floor Plan



Detail of Third Floor Wrought Iron Balcony



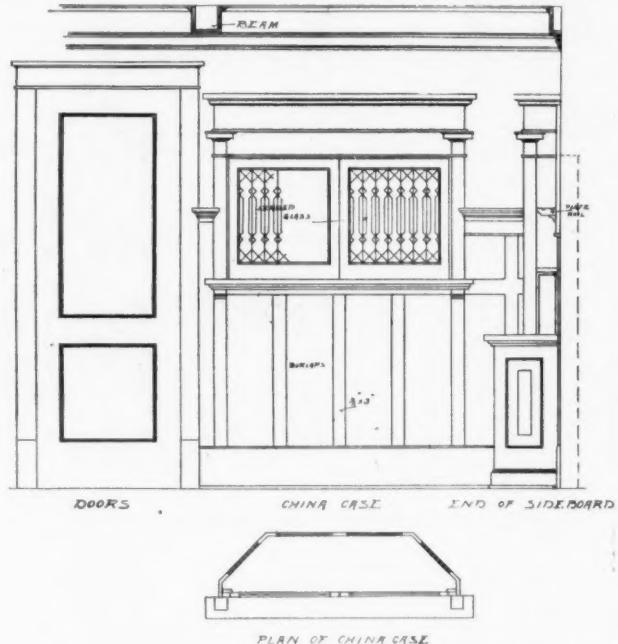
Detail of Second Floor Balcony Construction



Third Floor Plan

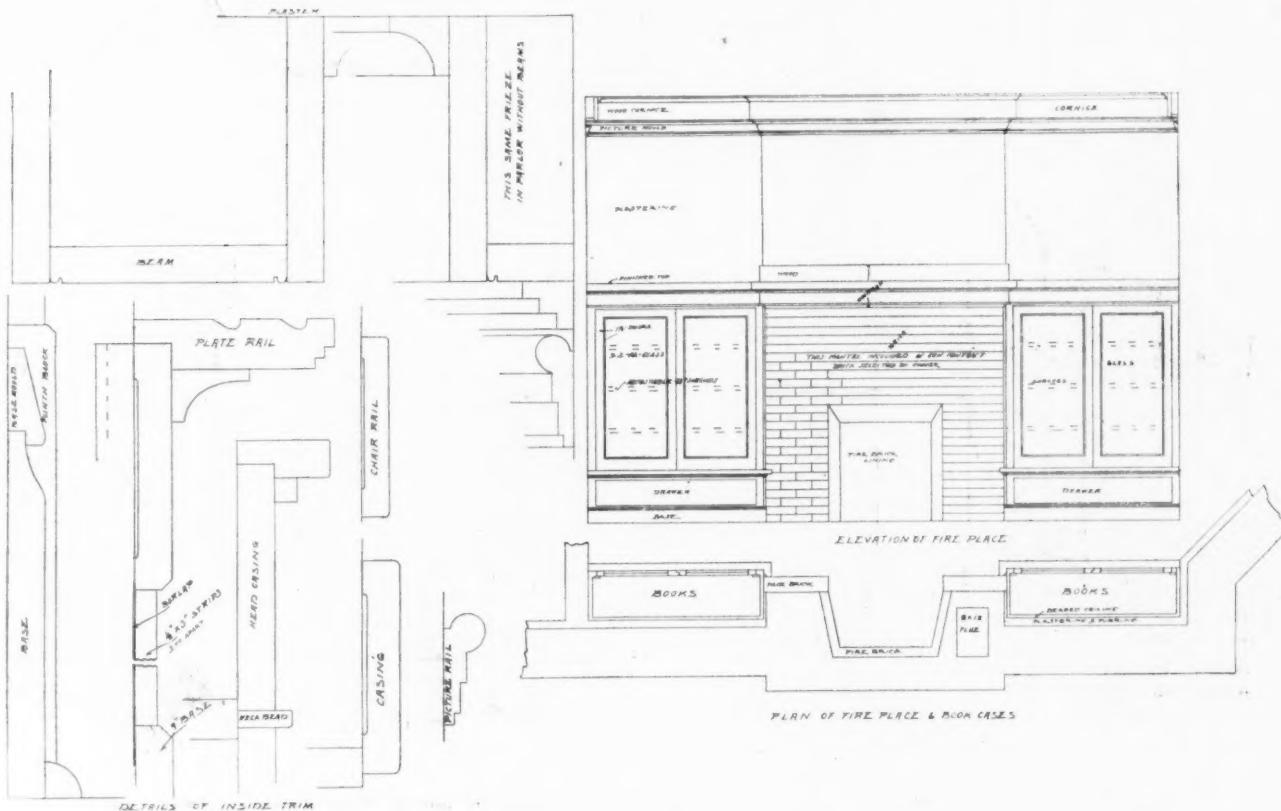
ing plans of a very attractive and thoroughly up-to-date flat building, recently designed by G. W. Ashby, architect, to be erected at Lafayette, Ind.

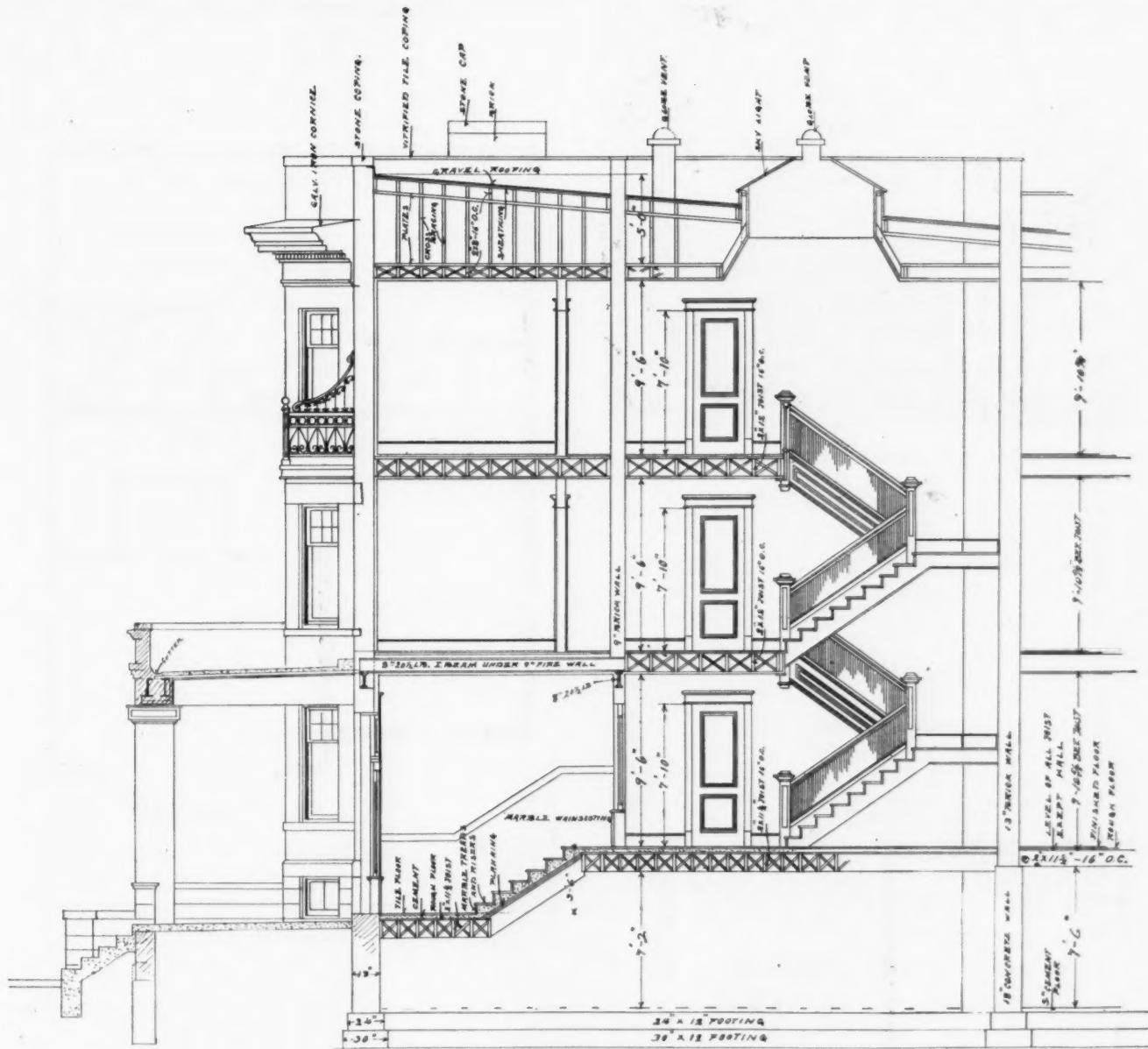
It is for a fifty foot lot and contains six apartments, each having six good sized rooms and a bath. It will



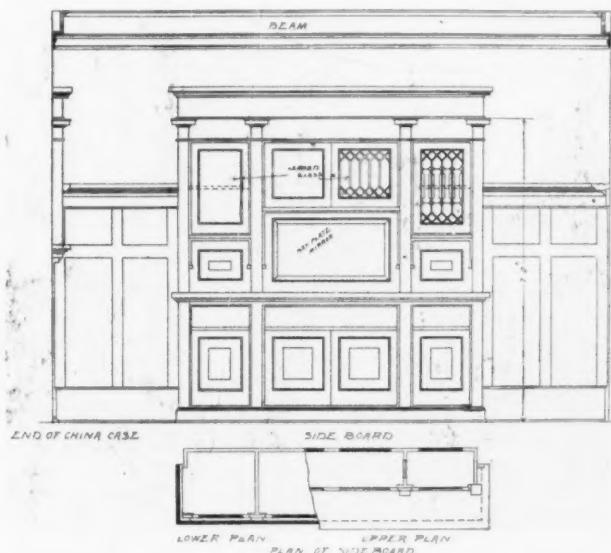
be noticed, however, that on the first floor plan two of these rooms are thrown into one, making a very large living room and providing for the outside vestibule on that floor. The arrangement of rooms is the one that has been often tested and found most satisfactory for buildings of this kind.

A very pleasing feature of the design is the large,





A Modern Flat Building—Forward Section



finely lighted dining room with built-in sideboard and china case, details of which are shown. This room will often prove to be the real home room of the family, and the conveniences and comforts here provided, together with the ample space, are sure to be appreciated. The kitchen arrangement, with its ice-closet, combination sink and work table, and pantries, is also good.

The front living room is suitable for a library, having a serviceable fireplace, with book cases on either side. Very much is added to the attractiveness and comfort of the front part of the building by the porch and balconies as shown. The exterior treatment is in pressed brick and stone.

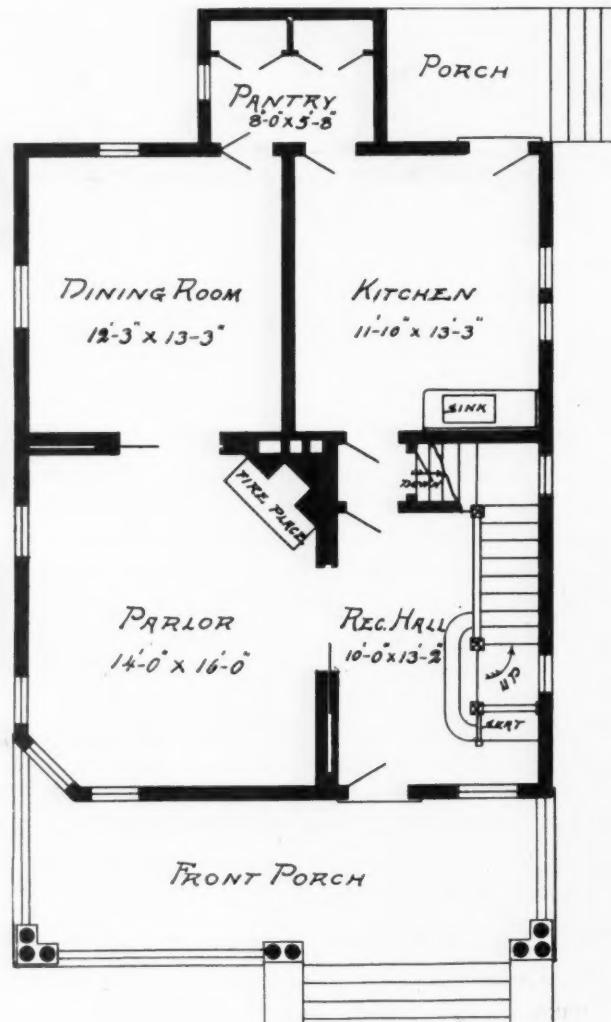
A Small House at Moderate Cost

This house, built by C. E. Spaulding at Centralia, Ill., makes a very satisfactory small house for a large family. Every inch of room is put to good use. The

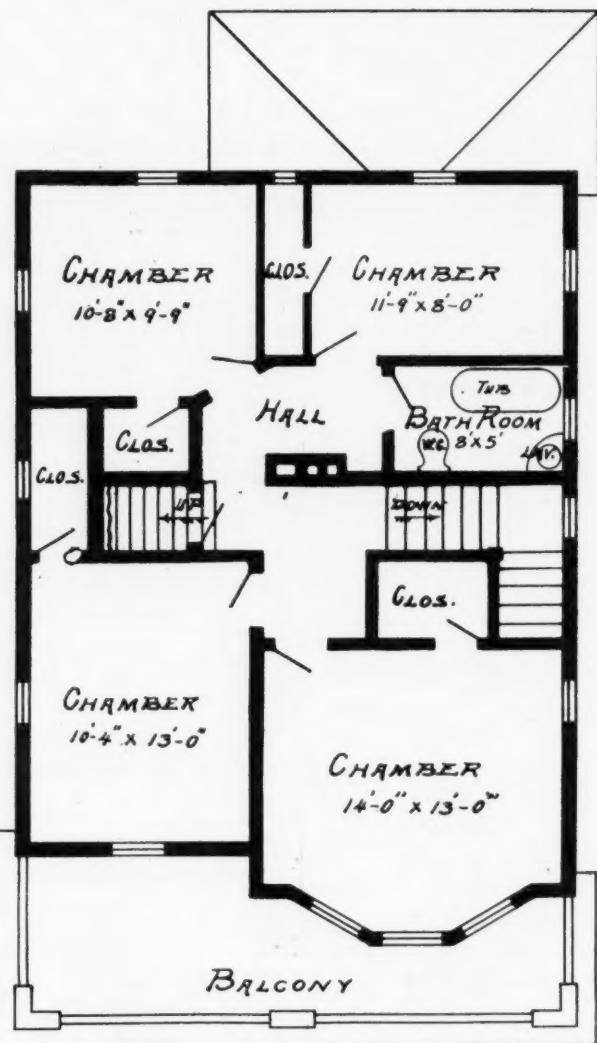


A House at Moderate Cost, Built by C. E. Spaulding, Centralia, Ill.

first floor has reception hall, living room and dining room, all connecting with wide sliding doors, also kitchen and pantry. On the second floor are four sleeping rooms, each with a clothes closet. The bath room is on this floor and is conveniently located. The broad porch, clear across the front, with roof constructed as a second floor balcony, is a much valued



First Floor Plan, a House at Moderate Cost



Second Floor Plan, a House at Moderate Cost

feature. There is a basement under the whole house, the foundation walls being of hard pressed brick. The interior finish is cypress in natural grain. This house was built in 1906, complete with plumbing, electric lights and furnace, for \$2,875.



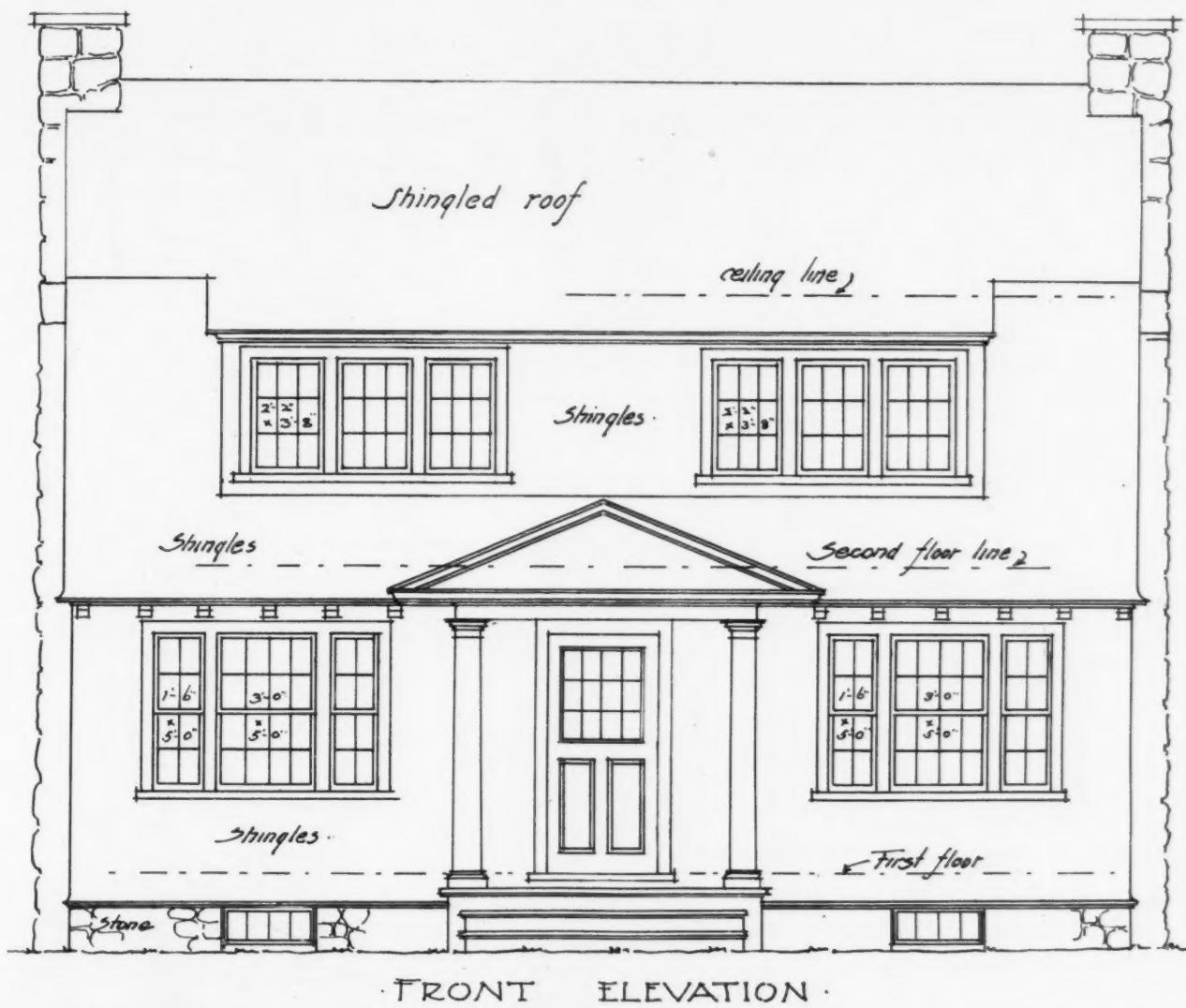
An Example of Successful Remodeling Done by C. E. Spaulding, Centralia, Illinois

A Thoroughly Modern House

There is a look of snug coziness and comfort about the little residence designed by A. Raymond Ellis, architect, of Hartford, Conn., and erected in Battle Creek, Mich., full plans of which are here given, that appeals strongly to the home seeker of quiet, artistic tastes. The impression is of good cheer, airiness and sunshine.

The lines of the house rise gently from the building site, an effect produced by the gambrel roof with broad

A shore cottage requires a foundation of only stone piers or cedar posts. This is, of course, a saving over the entire stone foundation as required in this house. Small cottages do not require many details or the continuous supervision of an architect. Much in this case depends upon the builder; a reliable man will use good stock patterns and moldings to gain the effect the architect would desire. The construction is about the same as that of a more pretentious house. There is a plank sill, with a doubled 2 by 4 stud for corner posts, and



FRONT ELEVATION.

extending cornice, and also by the use of stained shingles down to the foundation wall. The front elevation is simple and direct, the window treatment, both for the first floor and in the dormers above, being very good. The side elevations are made very effective by the rough masonry chimneys as here constructed; and they give an appearance of stability to the whole structure.

The gambrel roof is admirably suited for small cottages, as it combines a minimum amount of material for roof and walls. If this was built at the shore or country, where the cost of labor and material is not so high, it should cost \$1,800; if built to live in the year around, it would cost \$2,500.

2 by 4 studs for all walls and partitions. The floor joists in the first and second floor are of 2 by 9 spruce. The interior could be sheathed up with hard pine; this method would save lathing and plastering the entire house. Such woods as cypress or white-wood stained natural, are used for the finish and trim, and are inexpensive; but when stained, are very effective.

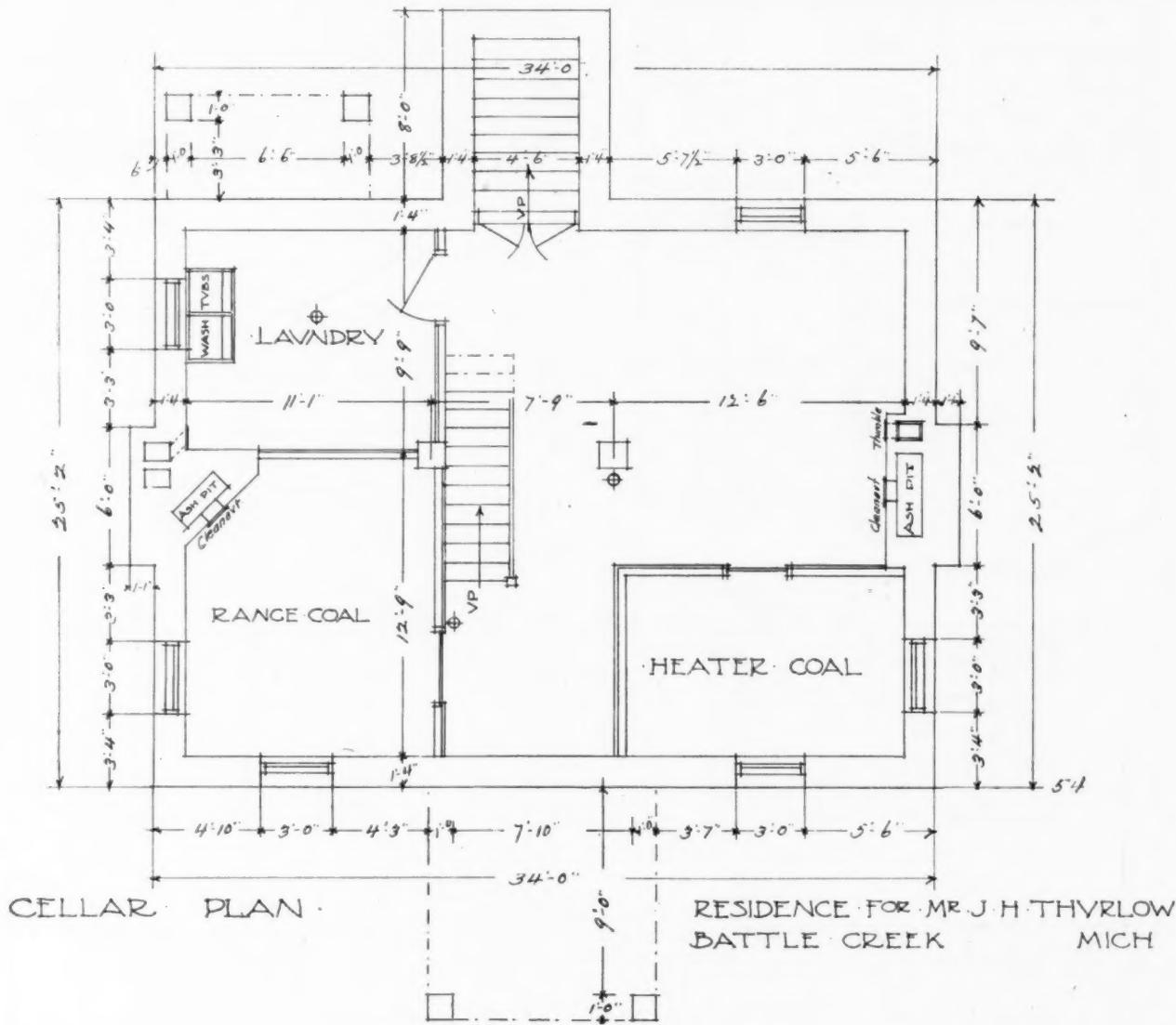
A small house can be well heated with a hot air furnace for from \$125 up. The plumbing varies with the quality of the fixtures used; in this case \$250 allows good second quality enameled iron and the other material of first-class quality.

There are several unusual features in this cottage:

First, the omission of the dining room, the dining table being placed at one end of the large living room. The large serving room or pantry accommodates all china, silver and table linen; therefore, the double purpose of the living room is not apparent. This is a gain in simple living and is a sensible fashion. The serving room is spacious, light and well fitted with shelves, cupboards and drawers, while direct access is given to the kitchen and hall. From here the cellar

On the second floor are three large, well lighted chambers, each with an ample clothes closet and box seat by the windows. The owner's chamber has a small dressing room attached. The bath room is of good size and is easily accessible. The halls, both upper and lower, together with the stairs, are broad and satisfactory.

The plans here given are very accurate and complete, being reductions from working drawings made



is also conveniently reached by a flight of stairs descending under the front stairs, which lead to the second floor. Access to the cellar is also gained from without by means of a flight of stairs covered with a bulkhead, located beside the back porch.

The cellar as constructed is of good height, well lighted and is finished for laundry and for general storage purposes. Reference to the first floor plan will show the convenient arrangement there, with the successful separation, even in a small house, of the library from the busier portion. The very large, well lighted living room, with its serviceable fireplace, window seat and beam ceiling, has proved very homelike and attractive.

one-quarter inch to the foot. The first and second floor plans, together with the side and rear elevations are given on the three pages following.

The "Ultimate" Skyscraper

One of the great captains of construction, writing of the "ultimate" building in New York, says:

"The top stories of the tall buildings are great places to live in, and, of all things, to sleep in; so quiet, so well ventilated." Then follows the prediction that "some chap will come along with hotels and apartments in one end of his building and with a market-place and a theater in the middle and an office building at the other end, with a railway terminus under it all.

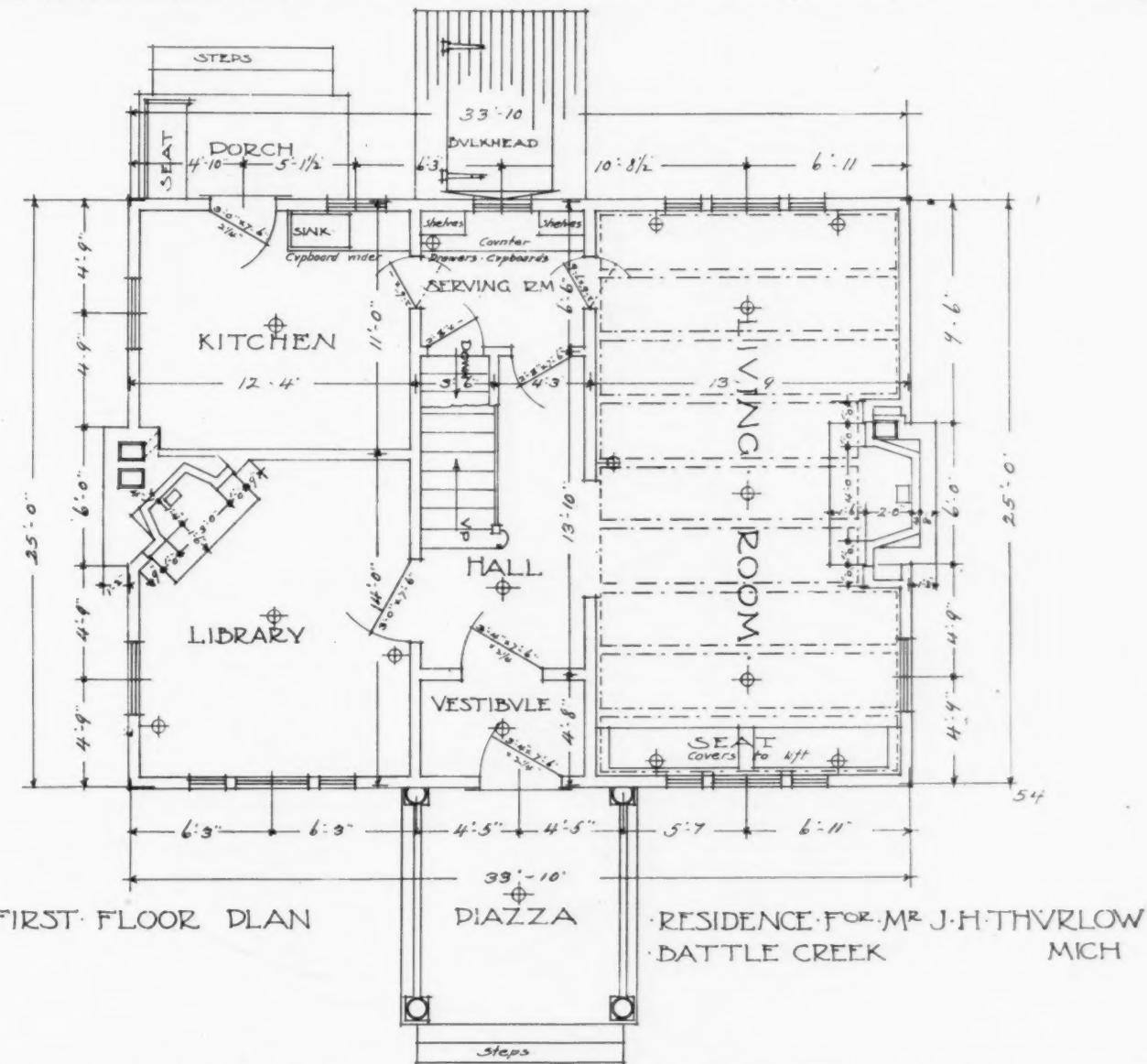
If there's a roof garden on the top you have the whole thing."

This is a vision of the simple life luxurious. Whoso enters into it will leave behind the nightmare of subway atmospheres, bridge crushes and ferry-boat uncertainties. There need be only the provision of roof-garden gymnasiums and swimming-tanks—and perhaps skating-rinks in winter—to remove the hygienic objections to a constant existence within the limit of one block.

One musical instrument is permitted in each flat, but no flowers may be placed on the window sills, and the tenants must sign an agreement to wear slippers indoors.

Fireproof Houses

"Because our fathers did it that way" seems, to some of our builders, no excuse today for being content with fire-traps to sleep in, when we are taking



But perhaps the limits and the room for exercise would be extended eventually by the construction of bridges from one "ultimate" roof to another.

Rules for Life in Flats

In Berlin a remarkable clause is contained in the will of a wealthy landlord named Boernitz, who died last week. The testator bequeaths a large number of flats to his heirs on the condition that they do not let them to persons keeping servants, or having children, dogs, cats or birds. Tenants may not be engaged in night work which will cause them to return home while the other occupants are sleeping.

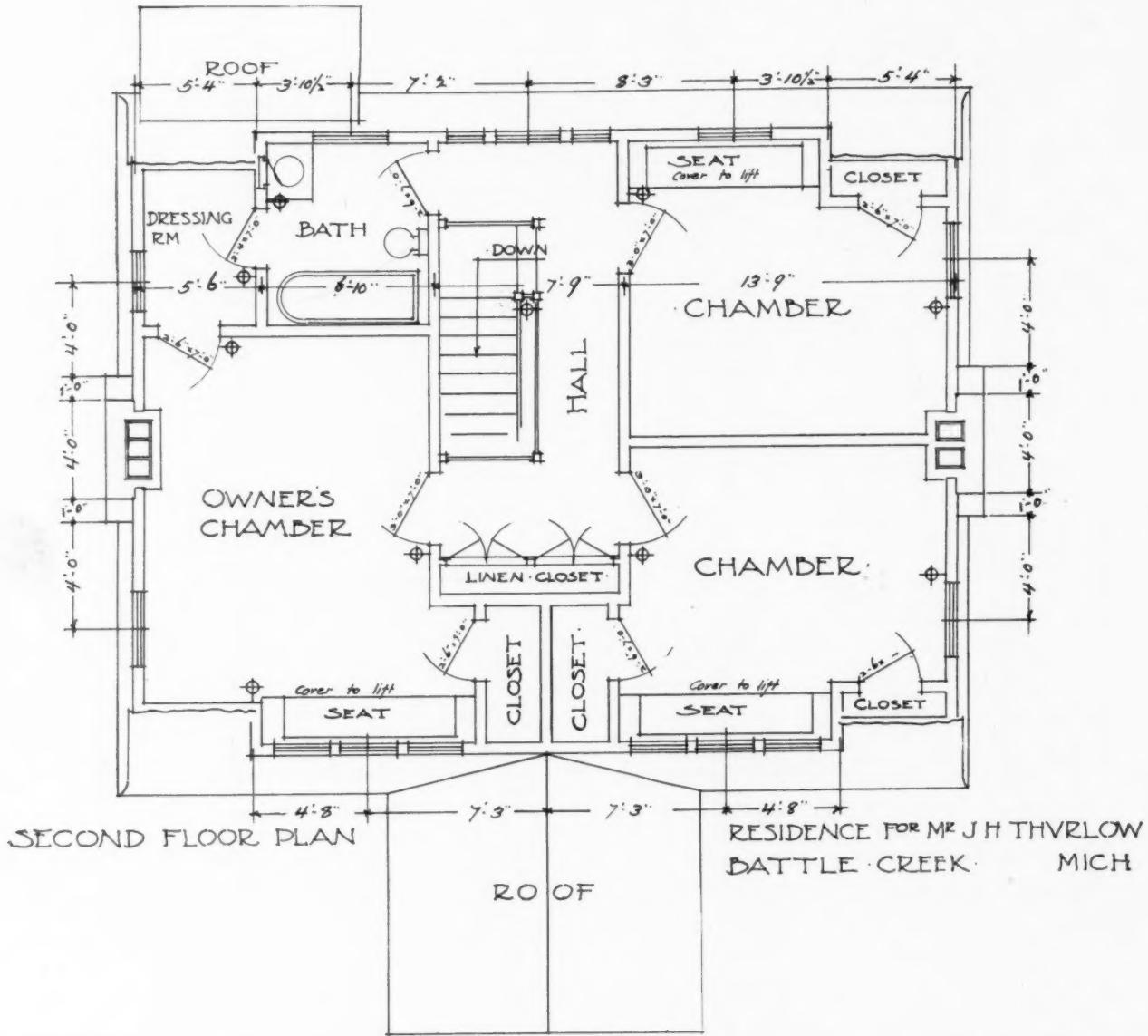
so much trouble to fireproof the places where we work. This point is worth considering, especially by those who are to build in the country, or in places where means for checking a fire are few. In some cases also the increasing cost of lumber and the decreasing cost of cement, metal lath, terra cotta, etc., make the difference in cost very slight between material that will burn and material that will not.

How to Use Glue

For glue to be properly effective, it requires to penetrate the pores of the wood; and the more a body

of glue penetrates the wood, the more substantial the joint will remain. Glues that take the longest to dry are to be preferred to those that dry quickly, the slow-drying glues being always the strongest, other things being equal. For general use no method gives such good results as the following: Break the glue up small, put it into an iron kettle, cover the glue with water, and allow it to soak twelve hours; after soaking, boil until done. Then pour it into an airtight box,

Lumber Company and the Associated Press passed out the word that they were the largest sticks ever shipped from any port in the world. The sticks were 36 by 36 by 60 feet. These sticks went to the Panama canal. Bellingham, Wash., not wishing to be too modest, came to the front and reported a stick cut by the Bellingham Bay Lumber Company for a dredge spud stick which was 40 by 40 by 90 feet. The Tacoma Mill Company cut a keel for the Steamer Mexico



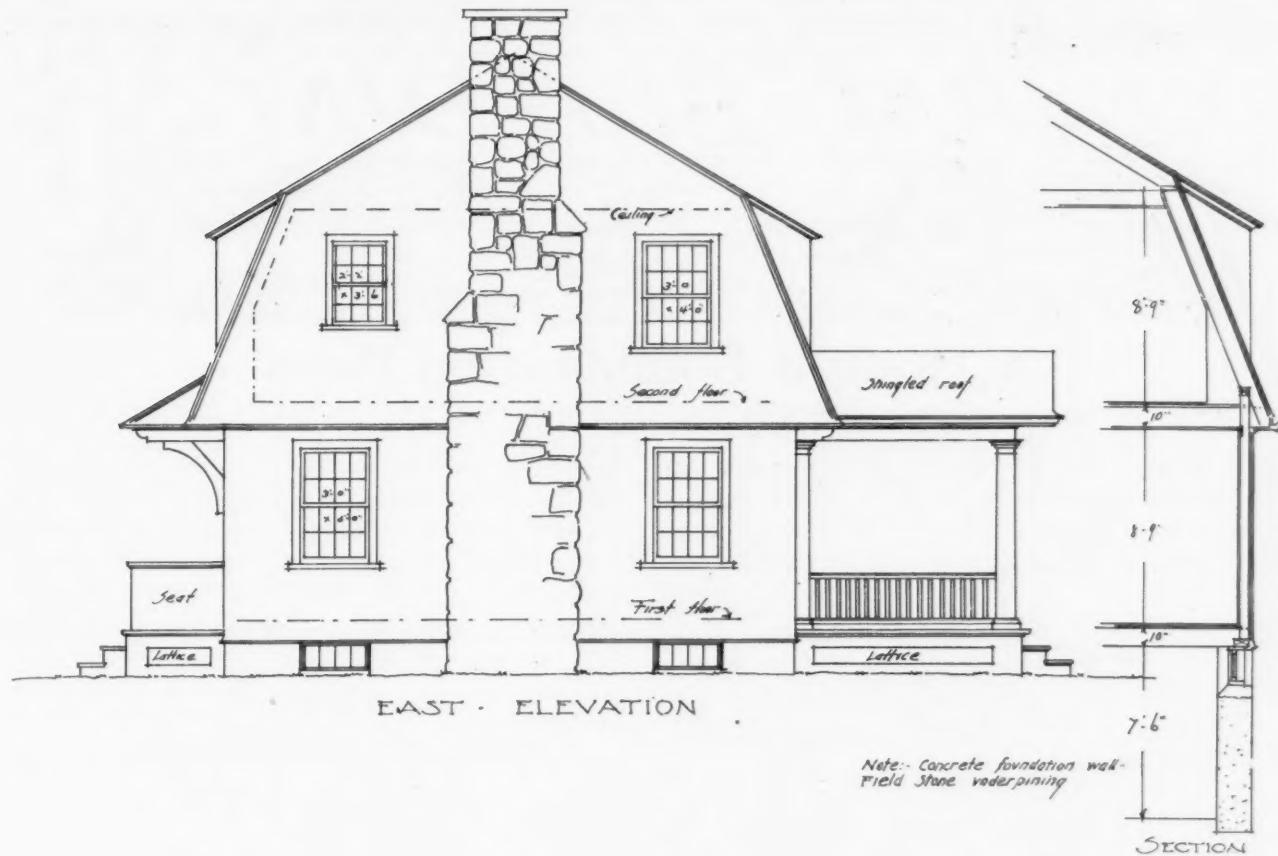
leave the cover off till cold, then cover up tight. As glue is required, cut a portion and melt in the usual way. Expose no more of the made glue to the atmosphere for any length of time than is necessary, as the atmosphere is very destructive to made glue. Never heat made glue in a pot that is subject to the direct heat of the fire or a lamp. All such methods of heating glue cannot be condemned in terms too severe.

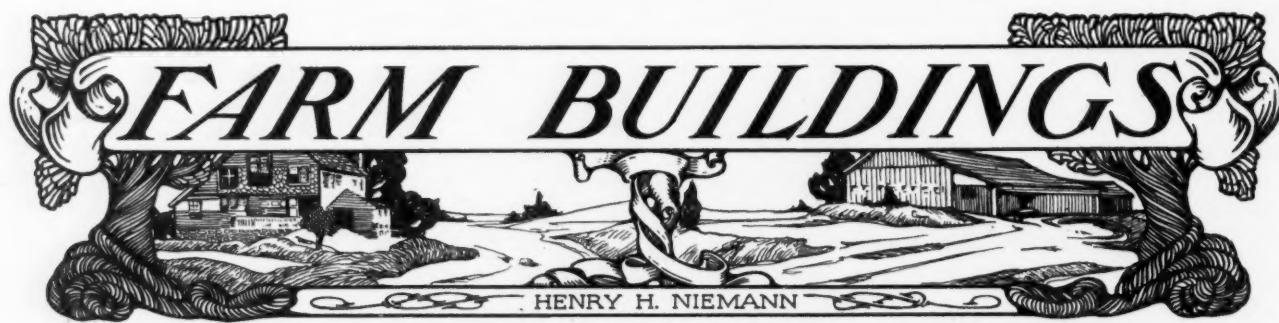
Big Stick Statements

The president of the United States must realize that he isn't the only man who has a big stick. Recently some big sticks were sawed by the Portland

which was 24 by 24 by 136. Then there was the big spruce stick at the St. Louis Exposition from the Grays Harbor Commercial Company, of Cosmopolis, Wash., which was 121 by 121 by 9. It took a Missouri farmer boy to find out how that was sawed with a nine foot band. Manager White one day heard him explaining to a crowd that it was set up on end and run through that way.

Don't be stewing over nothing all the while;
Don't imagine there is danger in a smile.
There's no growling and for grouching no excuse;
Fretting never gets you "nowhere"—what's the use?





A Modern Combination Barn

COMPLETE PLANS OF A WELL BUILT STOCK AND STORAGE BARN — LABOR SAVING FEATURES OF ARRANGEMENT POINTED OUT

HERE is every year a more pronounced tendency in this country among progressive farmers to treat agriculture, dairying and stock raising as a productive manufacturing industry, and to pro-

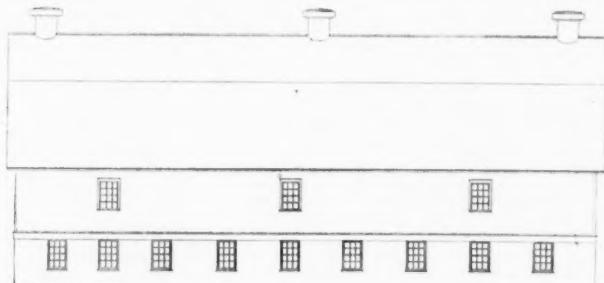


vide proper buildings and equipment on that basis. Some very practical, labor saving barns have been designed along this line. The plans we are showing this month are for a thoroughly up-to-date combination barn for Mr. J. H. Rice, at Houghton, Mich., and embody a number of excellent features.

It is an economical design of the rectangular type, 109 feet 4 inches long and 53 feet wide. The basement is high, light and dry; the 18 inch masonry wall and the well fitted windows assure good warmth in the coldest weather. On one side of the broad driveway, which extends through the middle from end to end,

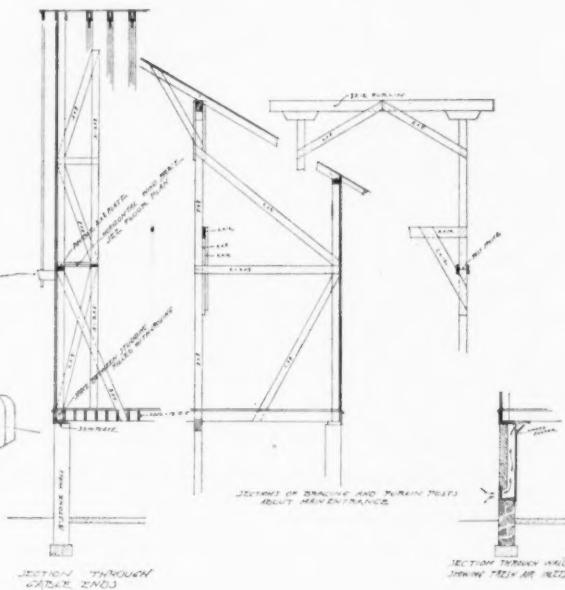
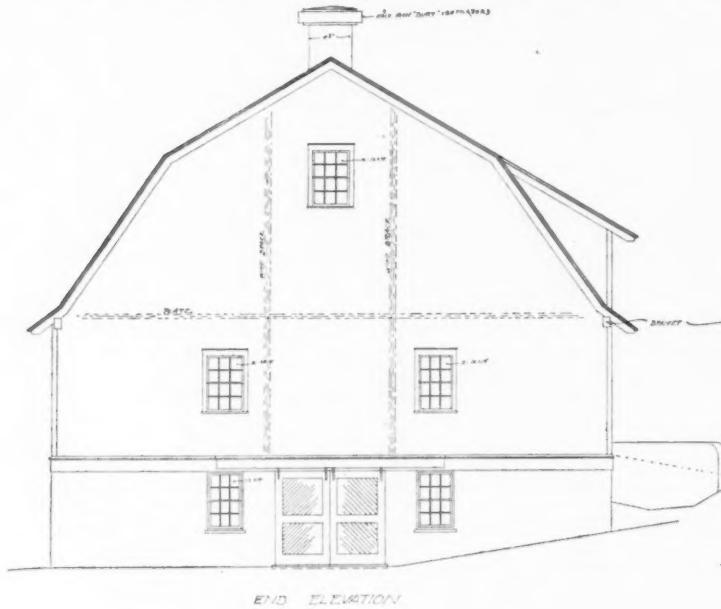
are the cow and horse stables. Provision is made for thirty-two milch cows in a double row of stalls with feed alley between. There are stalls for ten horses. Good ventilation is secured by means of the approved fresh air ducts through the wall and vents to the roof. The floor in both stables is plank laid on cement; and the mangers are of cement. The feed mixing room is located centrally, just below the feed bins on the floor above.

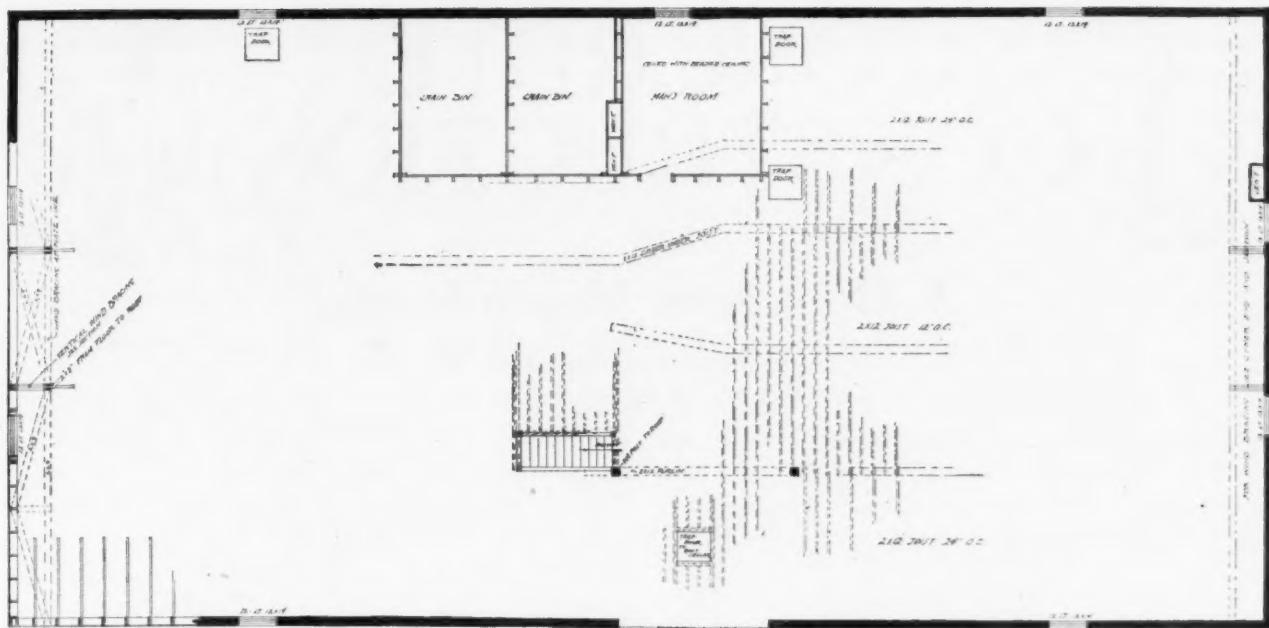
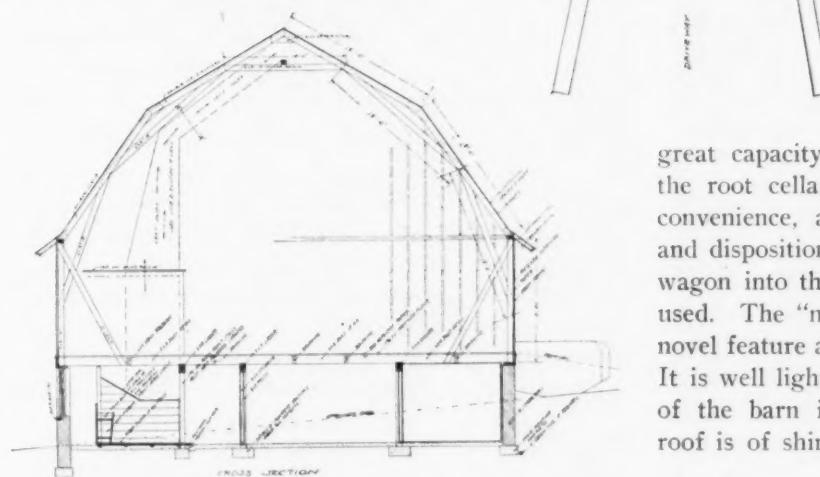
The space on the other side of the driveway is di-



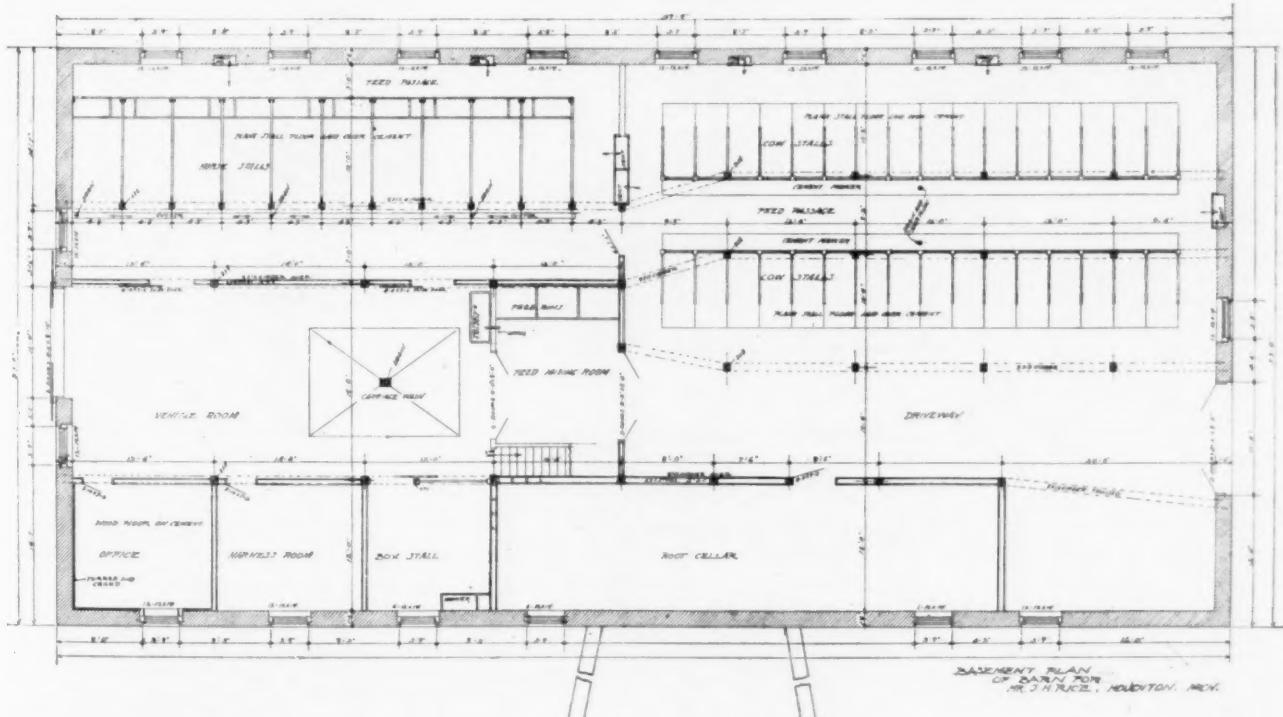
vided into root cellar, box stall, harness room and office. This last is made very snug and comfortable, being furred and ceiled.

The main floor is used for the storage of hay and grain; and the self-supporting roof construction gives



HAY AND STORAGE FLOOR
OF BARN FOR
MR. J. H. RICE, HOUSTON, TEX.

great capacity. There are trap doors in floor over the root cellar and the stables. These are a great convenience, and make possible the easy unloading and disposition of heavy feed supplies right from the wagon into the place where they are to be stored or used. The "man's room" provided on this floor is a novel feature and one that very often proves desirable. It is well lighted and is clean and dry. The exterior of the barn is sided with matched siding and the roof is of shingles.

BASEMENT PLAN
OF BARN FOR
MR. J. H. RICE, HOUSTON, TEX.



CONCRETE CONSTRUCTION

A Concrete Mausoleum

CLASSIC RESULTS WITH A NEW MATERIAL—METHOD OF CONSTRUCTION AND COST—ADVANTAGES OF CONCRETE FOR THIS WORK

By Fred W. Hagloch

IN ERECTING a mausoleum of concrete we have many advantages over other materials, but one great objection to overcome, viz.: The idea that it must be built along the same lines as though granite

was made to resemble cut stone on the exposed exterior. While the vault is of modern concrete construction, the foundation is the plain type of concrete with drain tile for freeing it from dampness; the walls are double hollow concrete blocks with a quarter inch asphaltum between them; this waterproofing layer also extends over the main reinforced concrete roof slab, thus insuring an absolutely dry interior.

The exposed walls and roof are of artificial stone, made in molds and faced with one part Portland cement, one part crushed blue granite and one part crushed blue furnace slag. This gives them a light blue granite effect.

The interior finishes are all quarry products, white Vermont marble floor tiling and white Italian marble veneer on walls and ceiling. The doors are of bronze.

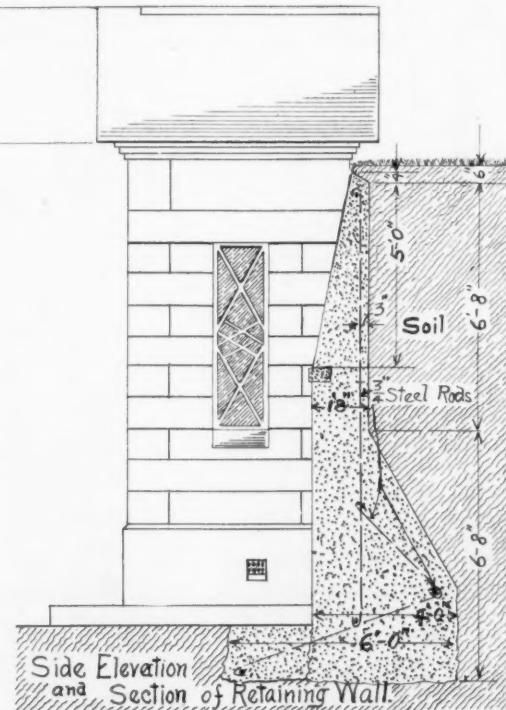
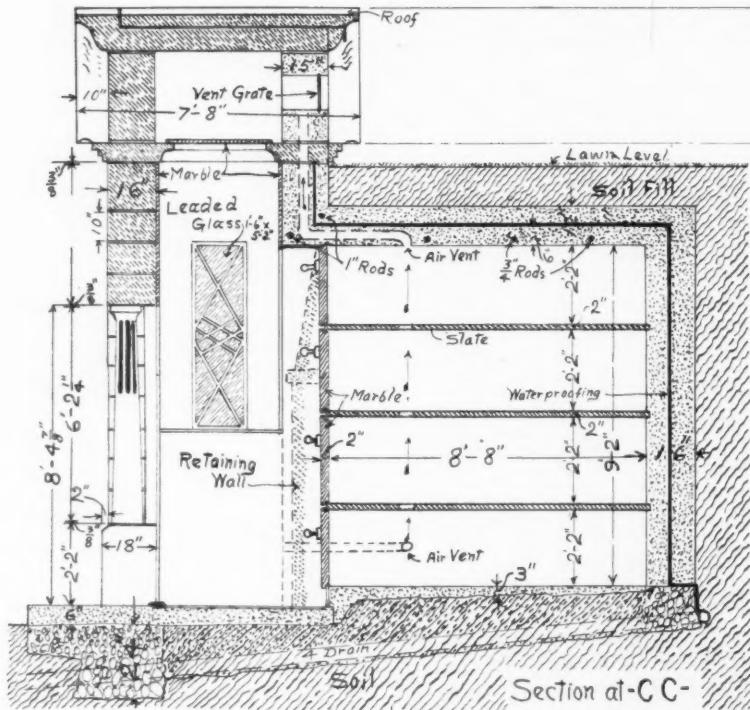
The catacomb covers are marble and the horizontal separations slate; all being materials universally used in granite and cut stone mausoleum construction.

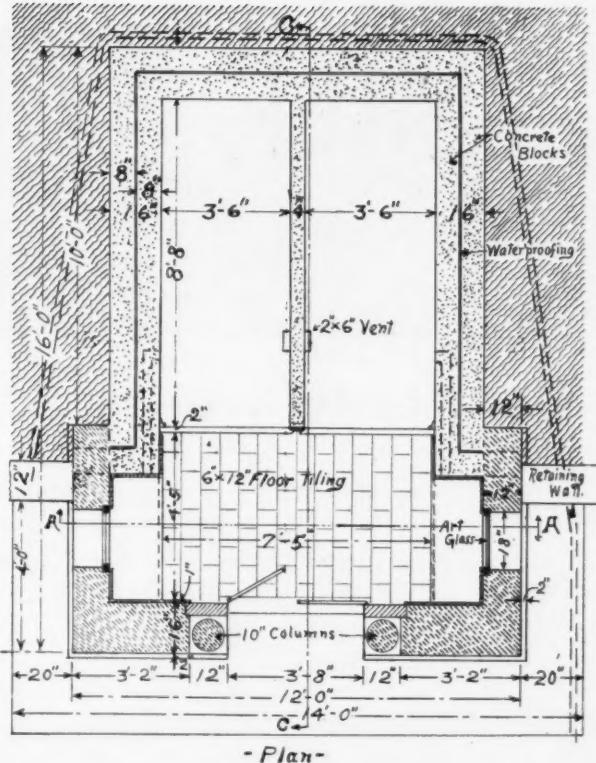
The system of ventilation for the catacombs is also of the much used type; the air enters at the sides and is conveyed in copper conductors to the lower catacombs, thence through openings in the slate to the



or cut stone were used.

The design shown is practically concrete throughout, except interior finish, and to satisfy the purchaser,



*- Plan -*

top, reaching the ventilating grate in the rear roof gable through a copper conductor embedded in the concrete, all as shown in the sectional drawing.

The mausoleum of this construction will cost \$4,000 and had the purchaser consented to a marbleized concrete interior it would have made a better structure at a saving of 10 per cent of the cost. An estimate, contemplating the use of Barre, Vt., granite throughout, and with exterior waterproofing applied only to the covered parts, was made, and the cost placed at \$5,400.

Lead and Oil Paints on Concrete

I have attempted many experiments to make lead and oil paints hold to concrete walls and floors and have found one that has proven durable through nearly two winters and one summer without discoloring, scaling or checking, and feel that it is lasting. For floors and walls that are badly discolored it is ideal, as it makes a permanent white finish possible, and is a good waterproofing as well.

If old concrete, it should first be cleaned by dry rubbing with a wire or steel foundry brush and followed by a wash consisting of three-fourths pound of blue vitriol dissolved in one gallon of water. This wash may be applied with a kalsomine brush; one day later apply the priming coat, for which raw linseed oil alone cannot be excelled. After same has become dry, which requires about five days, the lead and oil paint of any shade may be put on. Should the paint require thinning, turpentine should be used.

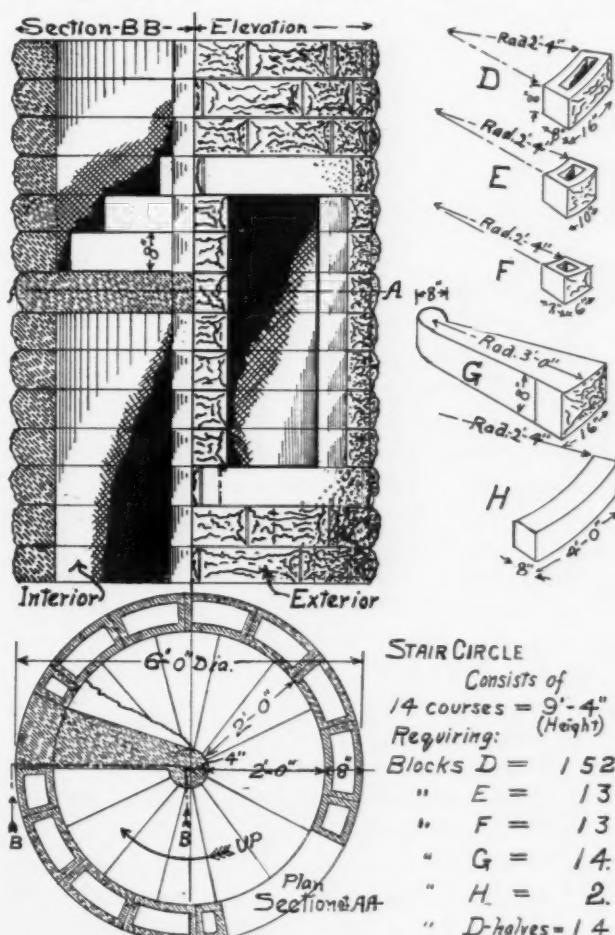
Recently, examination of work done October, 1906, on floors and walls has surprised me, as the white walls had but little tint of yellow, which is so prominent with lead paints on concrete; and the floor paint, which had been varnished over, was little the worse after sixteen months daily wear.

Concrete Block Fire Escape

For apartments, industrial plants and public buildings, the circular concrete block fire escape, a section of which is detailed in the accompanying illustration, offers many advantages over the present steel types. It stands independent of the building and may be utilized by the firemen in suppressing the flames.

When once erected on a firm foundation it never requires paint or repairs, and therefore never becomes a dangerous trap, as is often the case in steel escapes.

Its cost for four and five story buildings is about \$5.00 per foot, this being for six foot outside diameter, as shown, which gives a two foot stairway to the ground. There is an eight inch outside wall and eight inch center post, built by laying the steps as shown.

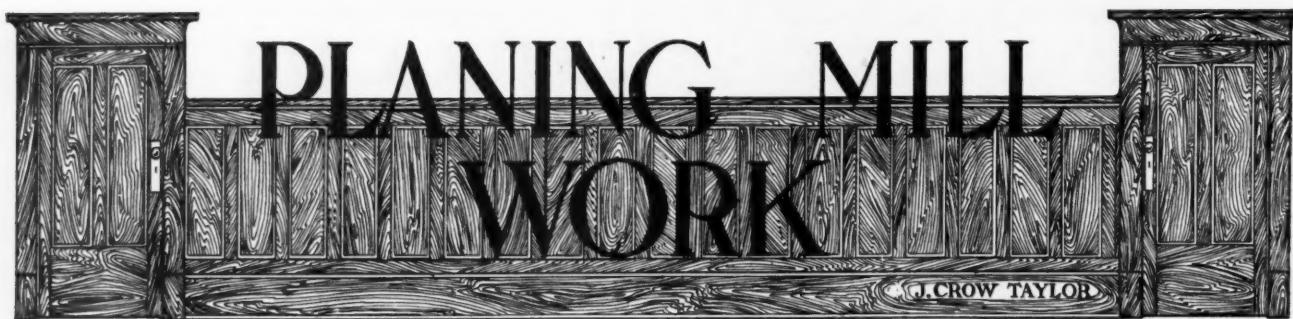


STAIR CIRCLE
Consists of
 14 courses = 9' 4" (Height)
Requiring:
 Blocks D = 152
 " E = 13
 " F = 13
 " G = 14.
 " H = 2.
 " D-halves = 14.

When erected inside of a building, the openings must be protected with either closed or automatic closing fire doors.

The limit of height for these towers is as follows: Six feet diameter, eight inch walls, 48 feet; eight feet diameter, ten inch walls, 64 feet; ten feet diameter, twelve inch walls, 92 feet.

Its first cost being about the same as for steel escapes and the fact that no repairs are required, leave but one objection—that of space occupied. When built into the rear corner of a building it saves material and adds to the stability of the walls to which it is attached, while steel escapes injure and load the wall.



Suggestions for the Get-Ready Season

PRACTICAL MONEY-MAKING IDEAS ON MILLWORK—WORK THAT CAN BE GOTTEN OUT IN ADVANCE AND KEPT IN STOCK

By J. CROW TAYLOR

FTER a while, when you get right busy on spring orders and find that you have to set up the sticker for every little job in pattern work which you might as well have had long ahead of time, and kept in stock, you will likely wonder why you didn't think of that sooner and get ready for the spring rush of work and prepare a lot of material that is commonly used in building operations so as to have it ready.

Among the things which can be worked out and kept in stock ready for spring trade is window frame stock of various kinds; it is a pity that one can't go a little further with this and have window frames themselves ready made up and kept in stock. This, however, seems impractical at the present time, because of the varying notions of people who build, about their requirements in windows. It is not only a difference in sizes of windows, but different ideas and different kinds of sash and various other things of that kind which seem to make it impractical to make and carry in stock window frames ready made up. There is, of course, a chance to do a certain amount of this where one has house plans before him of buildings that he has designed himself, knowing in advance what is to be used for windows. But, aside from this, it is not generally safe to make frames up in advance. What one can do is to run a lot of window frame stock, a lot of sills, a lot of small strips that have accumulated, a lot of molding of different kinds, and have prepared a fair amount of stock of this kind, so that when in the spring there come rush orders for frames of this kind or that kind all that is necessary to do is to put them together.

Molding is one thing you should be a little careful about running too heavily on, especially intricate patterns of molding, because there is a general tendency now to use molding sparingly, and to use the simpler patterns where it is used. So study carefully the tendencies of the trade in your community before working up much stock into molding, otherwise you may get a white elephant on your hands in the shape of a lot of molding you can't make use of.

In this connection there is one thing you can do a lot of without getting into danger of being burdened with a white elephant. You can put in a lot of spare time fitting up molding bits to cut various patterns of molding, and not only grind them and place them away carefully at hand where they can be gotten at, but also run some sample sticks and number them for identification and have them carefully racked so they can be gotten at conveniently. Then when you get busy and have to make frequent changes in your machines for every little job, you can do it promptly, and not have to go grinding and fitting up a set of bits; they will be there at hand and just a few minutes will serve to make the changes for certain numbers of stock. So you will find a little time spent getting your bits ready in advance will pay you in a full measure of satisfaction in the busy times of spring and summer.

Quite frequently it is possible in talking with prospective builders and helping them figure on their plans for spring building to determine definitely in advance quite a lot of the interior work, including stairways, grilles, columns, and mantels. For example, a mantel of special design is wanted—and by the way there are quite a number of them these days—this work can be done, milled out and frequently put together in advance of the beginning of the spring building work, not only furnishing employment during the get-ready season but also facilitating matters when you come to build. At times it will be desirable to get up special features of this kind in anticipation of the possible wants of customers, because many people, when they see something already put up that appeals to them, will be induced to buy it, whereas, if you were to try to talk to them about making the same thing, they wouldn't be able to understand or appreciate its good qualities, and might not be induced to give an order. This idea, of course, has a chance to work both ways, and you might get up something that couldn't readily be disposed of, but if a man knows his trade well it is worth taking the chance, because having stuff ready to sell of any

appealing character will do more to help sell it than any amount of talk with nothing but plans and general ideas to show.

If you expect to do anything with window and door screens in the early summer the time to get ready for this work is in advance, and about the only chance to make any money out of it is to run your stock for this work in large quantities and have it ready. If you take an order for a set of screens and

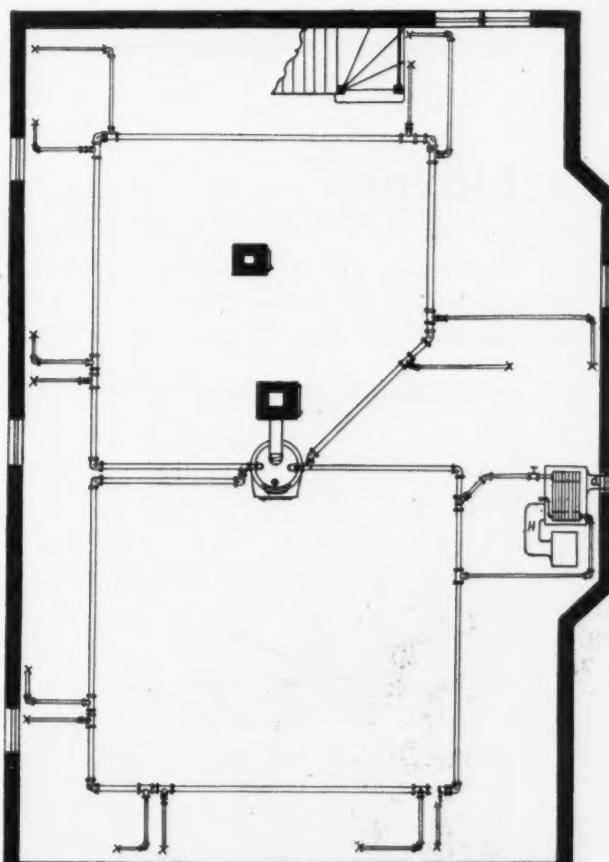
then have to get busy and set up the machine and run the stock, and then take another order and run a set, too much profit is eaten up by the time it takes to change the machines. If you are going into the screen business, go into it right and get ready in advance. Take your scrap pile and work it over into stock for screen frames and have a good supply ready so that when the time comes to do the work, all you will have to do is to frame the stock together.

Heating a Modern Cottage

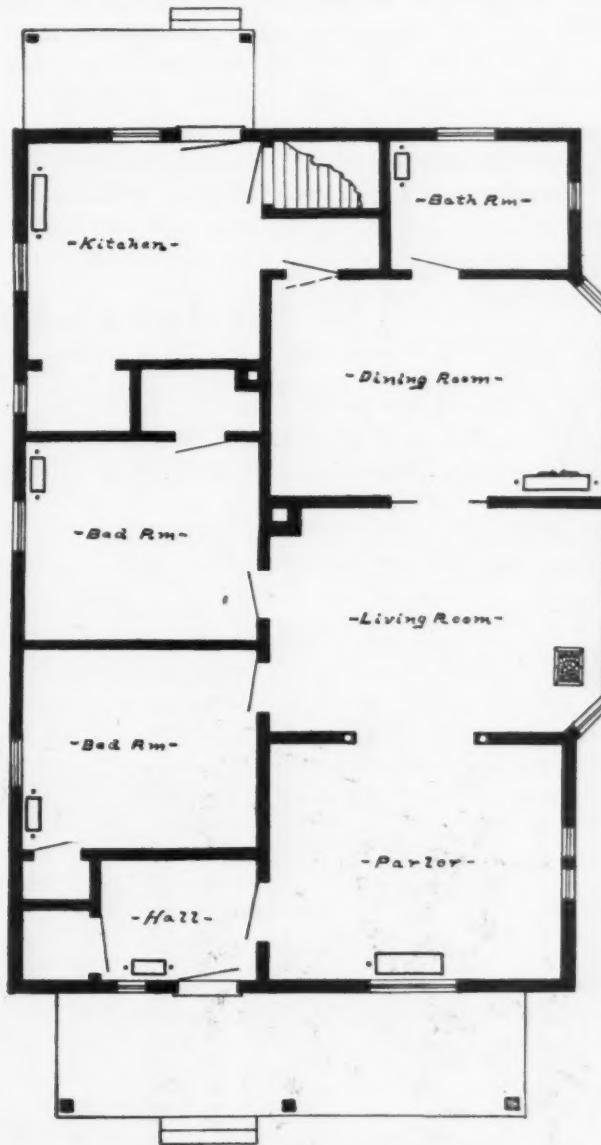
BEING THE THIRD OF A SERIES OF ARTICLES ON HEATING OF VARIOUS CLASSES OF BUILDINGS—ONE PIPE CIRCUIT HOT WATER HEATING SYSTEM FOR COTTAGE SHOWN

By Perry Weber Rathbun

THE heating system shown and described on these pages is one that appeals to many prospective builders and house owners, on account of its neat appearance and the use of less material.



Basement Plan



First Floor Plan

which is supposed to lower the first cost; but it does not, as larger pipe and fittings must be used, while with a two-pipe system of water heating much smaller pipe and fittings are used, thereby making the cost of both

caution to perfect a proper installation. The flow main at boiler should rise up as near as possible to the ceiling of basement, circling around the entire or a part of basement to the return connection, at all

times having a pitch of at least 1 inch in every 10 feet down in direction of return connection. All branches should have a pitch of $\frac{1}{2}$ to $\frac{3}{4}$ inch down toward mains. Great care should be taken to see that the main equals the combined areas of all flow branches taken therefrom, and the main nowhere in the circuit is to be reduced in size, returning to boiler same size as it leaves.

The greatest trouble with one-pipe systems now being installed, the mains are, in many jobs, too small to give satisfaction and convey the proper amount of hot water to all radiators on the job. All flow connections should be taken off the main by the use of a reducing tee tilted to a 45 degree angle, or with opening facing up on which place a nipple with a 45 degree or 90 degree elbow; then run branch over horizontally to a point where a vertical riser connects to the valve at radiator. Return connections should be taken from the other end of radiator, drop vertically, and then with a slight pitch down, run over to the side opening of the other tee, which should be placed in the main as shown right after the flow tee.

As will be noticed by radiation schedule, the author has figured a 38 inch dining room radiator with warming closet, which is sure to pay for itself many times over by the convenience and comfort derived from

same. In the living room indirect radiation has been figured to insure good ventilation; indirect radiation is from a coil hung from the basement ceiling inclosed in galvanized iron boxing with connections to both cold and warm air ducts in such a manner that the cool, fresh air from exterior will enter and circulate around and through the radiator before passing into warm air duct and up into the room.

When figuring necessary boiler capacity, add 75 per cent to indirect radiation and 50 per cent to the actual direct radiation to derive the proper rating of the boiler required, which in this case makes a total capacity of 800 square feet of heating surface.

SCHEDULE OF RADIATION.

ROOMS	HEIGHT	KIND	AMOUNT	DEGREE
Reception hall.....	38"	Direct	35'	70°
Parlor	20"	Direct	84'	70°
Living room.....		Indirect	140'	70°
Dining room, with warming closet.....	38"	Direct	70'	70°
Front bed room.....	32"	Direct	40'	65°
Back bed room.....	32"	Direct	40'	65°
Kitchen	38"	Direct	70'	65°
Bath room.....	44"	Direct	32'	75°
Total			511	square feet

An Inexpensive Library

PERSPECTIVE AND FLOOR PLANS OF A MODERN WELL PLANNED LIBRARY BUILT COMPLETE FOR \$7000—
DETAILS OF ARRANGEMENT AND FINISH

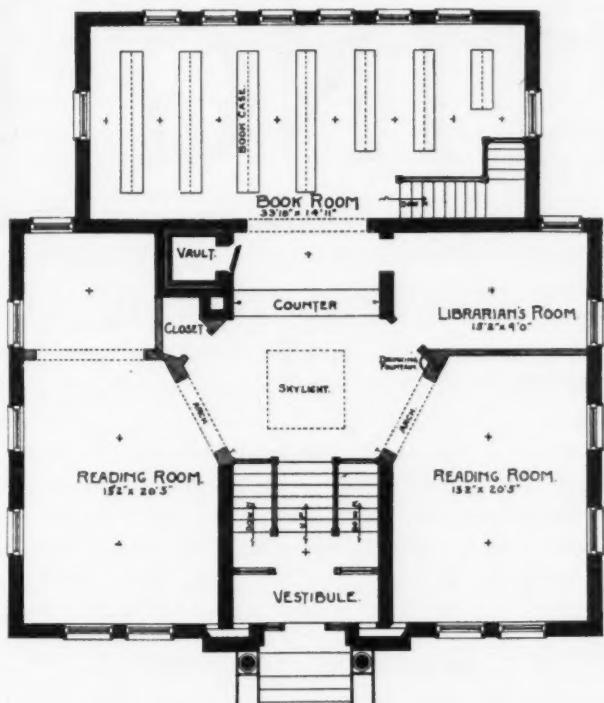
WE ARE this month showing the perspective and floor plans of an artistic and yet inexpensive library building, which was recently

erected at Glenwood, Ia., after plans were prepared by Woods & Cordiner, of Lincoln, Neb.

This is one of the Carnegie libraries, and the appro-



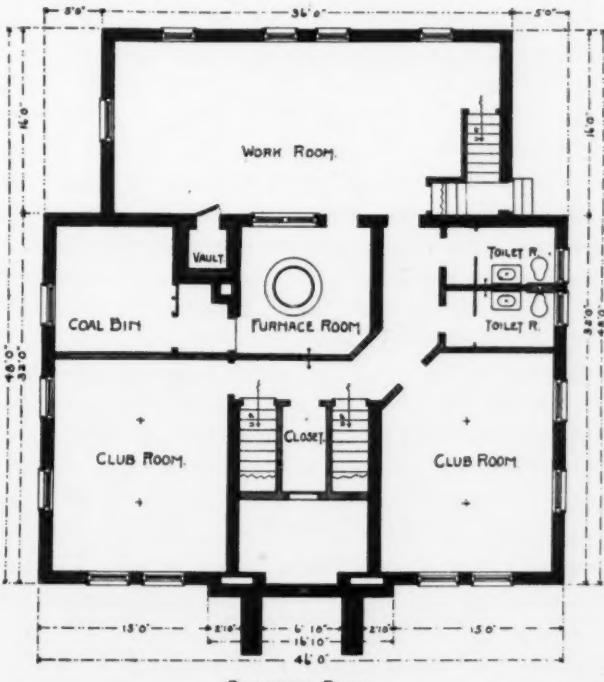
priation for same was \$7,000. The plans were completed and contract let, including the bookcases, at that figure, which speaks well for the calculation on



MAIN FLOOR PLAN.

the part of the architects in preparing the plans to meet the appropriation.

The main floor contains two large reading rooms, librarian's room and book room, besides the large distributing hall in the center of the building. There is



BASEMENT PLAN

a fireproof vault on this floor, for the safe keeping of the records, etc.

The basement rooms are reached by stairways from the main entrance and contains club rooms, a large

work room, furnace, fuel and toilet rooms, all well arranged, ventilated and lighted.

The walls are of brick, the basement being faced with common paving brick laid in black mortar, while that above the watertable is faced with buff pressed brick. The entire finish is of yellow pine, stained mahogany color, varnished and rubbed down to a dull finish. The steps, columns and trimming stone are of Bedford limestone. The cornice is of galvanized iron, painted and sanded to match the trimming stone in color.

The heating is by furnace and the ventilating system, in connection with same, is perfect in its workings. The building is very satisfactory throughout and one of which the patrons may justly feel proud.

A Concrete House Dream

"Your concrete house proposition amuses me more than anything I have seen in America," said Mr. W. W. Dunwood, of Manchester, England.

"Now, you propose to build a mold of metal and duplicate all of the houses from this original mold. What a jolly looking country you will soon have. The railway trust, I can see, for example, will in time buy a depot mold and it will turn out one hundred thousand depots and plant them around the states. They will all be precisely alike."

"Then you will have contracting firms which own molds for special houses. All the seven room houses in all the states will be the same."

"This might not appeal to the Italian or the Frenchman as extremely artistic, but I can see one advantage. When a man lives in a seven room house in Indiana and suddenly switches out to California he will feel quite at home, and his furniture will fit, and possibly even the house cat will think it her old Indiana homestead and not even bother to return to her native state."

"All your barns, garages, municipal buildings, post-offices, jails, etc., I suppose will be alike. The idea is delightful, and so thoroughly American and original!"

"It will also save visitors from Europe lots of trouble. They can visit only one city, and when they return home they can safely talk about any American city which comes up for discussion."

Strongest Known Wood

Recent tests of the hardwoods of Western Australia have revealed the extraordinary properties of yate, believed to be the strongest of all known woods. Its average tensile strength is 24,000 pounds to the square inch, equaling that of cast iron. Many specimens are much stronger, and one was tested up to 17½ tons to the square inch, which is equal to the tensile strength of wrought iron. The tree grows to a height of 100 feet, and a diameter of two and a half.



Economy in Paint Purchasing

TENDENCY TO USE INFERIOR INGREDIENTS IN ORDER TO LOWER COST—
STANDARD PRICES FOR MATERIAL USED IN PAINT

IN MOST parts of the country, the painting season is on in earnest, or soon will be, and painters will be considering the purchases of stock for their approaching contracts. It may be well, therefore, in this connection to reiterate a statement that has been made heretofore in these columns, that the painter will always find that the best materials are the most economical in the end. Take for example, white lead, which seems to be recognized as a standard of comparison. The numerous individual factories have within recent years been consolidated into larger corporations, and at the present time there are only about half a dozen different corporations engaged in the manufacture of this material. For this reason, there is little or no competition except in the matter of quality, and prices are fairly well maintained. Except when sold in large quantities, the prices quoted by the corrodors (or manufacturers) in their current lists, will not be broken, and even in carload lots of dry white lead—that is to say, of lead before it is ground in oil—a drop of one-eighth of a cent a pound to a favored customer, is sufficiently important to excite comment in the trade. For this reason a painter should always view with suspicion any salesman who offers to sell him “pure white lead” at any figure less than the established rate for the quantity and size packages that he desires to purchase. Of course, it is well understood that it costs more by the pound to purchase white lead in twelve and a half, twenty-five, fifty or one hundred pound kegs than in the larger size packages, on account of the greater relative cost of the container.

Cheap Material—Extra Labor

As every painter knows, the cost of the labor is at least three-fifths the total cost of painting, and frequently more, so that the cost of the paint is relatively small. Now if the smooth-tongued salesman comes into your shop and offers the tempting bait of a cent a pound less on the price of the “white lead” which he is interested in selling, do you stop to ask yourself how, in view of existing conditions, he is

able to sell you “white lead” at this much less than the ruling market price? To the man who knows, there is but one explanation. The material he will furnish, if he secures your order, may be labeled “white-lead,” but you may be certain that a sufficient proportion of the contents will consist of cheaper materials to enable him to sell it at the low price he has quoted. Now whether this cheaper material has any merit or not does not enter into the question at this point. It does explain, however, why the material in question can be offered at less than the price for pure white lead. Moreover, as the temptation to get as much profit as possible is strong with the average manufacturer, and as it is almost impossible for the ordinary purchaser to detect the amount of makeweight or extender that has been added, there is always a probability that it will be present in excess of the amount that would be needed to reduce the pound price by one cent. Whatever may be the effect on the durability of the paint caused by these so-called inert pigments, or the other materials that are used to produce the cheaper grades of white paints sold as white lead, it is very certain that they lack both spreading and covering capacity, so that even though you may save a cent a pound—or even more—on the purchase price, this saving will be neutralized by the added cost of the additional quantity of material needed to cover the surface and the extra labor in spreading. And after all, does the saving amount to anything? Two hundred pounds of lead will coat a large house, and at one cent a pound, the saving on the house will be but two dollars. Whereas it may readily cost you an extra day’s labor in spreading, and possibly may mean that the work will eventually give dissatisfaction to the owner and cause you the loss of a customer.

Avoid Cheap Ochre Paints

Then there is the case of ochre. Perhaps there is no other pigment of which there are so many inferior grades as there are of ochre. Every day, almost, we hear of the discovery of a “paint mine” in some part

of the country, and the local newspapers are full of glowing stories of the prosperity that is to fall upon the community by exploiting this new source of wealth. It is true that the material is usually an ochre, but of such an inferior grade that it is practically useless. Nevertheless, great quantities of these inferior ochres are sold to painters who buy them because they are cheap, often buying them in the dry state, mixing them with oil by stirring it in with a paddle, and using this material for a priming coat. Nothing more unsuitable for the purpose could possibly be found. In the first place these American ochres almost always contain an excess of clay, which in its natural state contains a large amount of moisture. When mixed with oil and applied to a building, the moisture dries out and, especially if the priming be a heavy coat, such as is usually applied in two coat work, the wood is covered with an impervious skin that is non-porous and so far as oil is concerned, has almost the non-absorbent nature of a piece of glass, so that the subsequent coats of paint applied over this ochre priming, will not take hold of it, but will simply lie upon the surface, and when they are dry will peel off in flakes.

White Lead Best Priming Coat

Although there may be often an apparent saving in first cost in the use of an ochre priming, experience has demonstrated very conclusively that a white lead priming coat, tinted with not more than 2 per cent of lampblack, in order to hide discolorations in the wood, is the cheapest and the best material for the first coat on new wood.

Ochre is very often used as a finishing coat, on account of its pleasing color, or the agreeable tints that can be produced with it when mixed with a white base. For this purpose the painter will find it cheapest in the end to pay a higher price and secure a good quality French ochre. In the first place it produces a stronger tint with less of the tinting color, and in the second place it is more permanent. Many ochres of inferior color, and consequently of lower price, are toned up by mixing them with chrome yellow so that their color will be more pleasing. Now, while this may be perfectly legitimate, if the fact that it has been done is stated on the label, it is wrong if they are sold as pure ochre. Chrome yellow, through a very beautiful color, is not fast to light and will soon fade, and a house painted with a chrome toned ochre will fade to a dirty or dingy brownish yellow color, that will invariably cause the owner to become dissatisfied. For a saving of twenty-five or fifty cents, the painter risks losing a customer, when he uses one of these inferior ochres. Moreover, chrome yellow is apt to discolor and blacken in the presence of sulphur gases, so that in a factory district, or where much soft coal is burned, there is an added danger from its use.

Makeweight Adulterants

Almost all the tinting colors can be adulterated by

the addition of barytes or other makeweights or extenders. When ground in oil, these materials have absolutely no tinting capacity. Four coats of barytes ground in oil and thinned to the consistency of paint, may be applied to the surface of a board without hiding the grain. From fifty to seventy-five per cent of barytes can be added to any of the stronger tinting colors, without possibility of detection except by chemical analysis, when the color is looked at in the can. Nor will there be much difference in appearance when a little of the straight color is spread upon a board. But it will require two pounds of Indian red with fifty per cent barytes, for example, when added to 100 pounds of white lead to produce a tint of the same strength as will be produced by one pound of the pure Indian red, while the reduction in cost will not be over twenty-five per cent. A very little arithmetical knowledge will enable the painter to figure out how much he loses by buying the cheaper material.

In Regard to Mixed Paints

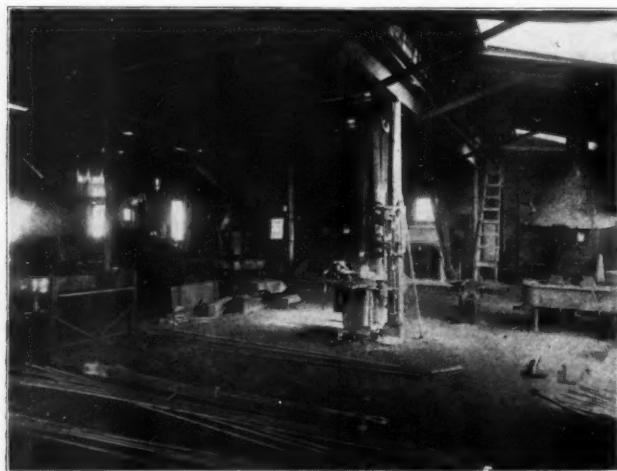
While it may not be so susceptible of demonstration, the same thing is equally true when it applies to mixed paints. When put up in a can with a fancy label, the mixed paint that is loaded with useless makeweights, that is, carelessly compounded or not thoroughly ground, that contains water or benzine in excess, does not appear very different from the much higher priced article that is made from honest materials, thoroughly ground together and mixed with care, and that is the result of years of observation and experience on the part of a manufacturer who values his reputation. The sample cards may show the same shade, and the customer who knows nothing of paint will naturally be beguiled into purchasing the cheaper article. No greater mistake can be made, for not only is an inferior mixed paint deficient in covering power, but it will invariably be found that it will require more labor to apply it, so that the actual cost of painting the house with the material that is cheaper by the gallon, will be in excess of the cost of painting with the higher priced mixed paint, whose manufacturer cares more for maintaining the quality of his product than he does for making a larger percentage of profit on a low priced, but inferior article. In selecting a brand of mixed paint—and there are many excellent materials of this kind on the market—the painter or the property owner will do well to look first to what that paint will do. Inquire carefully to find out how well it has stood on other houses, and look out especially for the manner of its perishing and ascertain if any expensive scraping or burning off is necessary when renewal is required. There are some mixed paints that answer every requirement that can be demanded of them, while others are totally unfit to use. Here, as everywhere else in painting, the best will be found the cheapest in the end and saving in first cost is very poor and very short sighted economy.

The A. E. Shorthill Company

SOMETHING ABOUT THE GREAT ORGANIZATION WHICH PRODUCES THE PHILLIPS HOT WATER HEATER

THE atmosphere of bustle and thrift that has made Marshalltown, Iowa, famous in the commercial and industrial world is nowhere more in evidence than in the great plant of the A. E. Shorthill Company, manufacturers of bridges, boilers and structural iron. Most of the readers of the AMERICAN CARPENTER AND BUILDER know this establishment as the maker of the famous Phillips Hot Water Heater, the hot water heating system that is considered by architects, builders and plumbers as perfection in that line.

It was to make a personal study of this institution, and to make our readers personally acquainted with



View in Structural Department, Blacksmith Shop

it, that the writer went to Marshalltown a few days ago. He was conducted through the various departments of the plant by Mr. C. R. Speers, the president and manager, and was permitted to follow the processes through which the heater goes in the hands of expert workmen, from the raw material to the finished plant, ready for installation in a residence, school, church or other structure where perfect heating arrangements are wanted.

Mr. Speers, by the way, impresses one unconsciously, with his marvelous business ability. There is no ostentation, but he believes in the heater. He believes in the structural iron work he turns out. He believes in every thing his plant produces, for it is the best that can be produced.

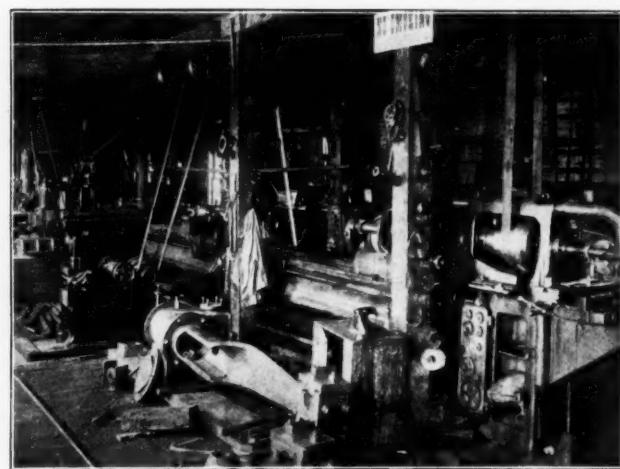
Like most every other big concern in the manufacturing world that amounts to anything, the Shorthill Company had a small beginning. It started in a little plow repair shop forty-five years ago. Now, through merit alone, it is a \$250,000 corporation, and its business covers the entire country. The causes for the remarkable growth of the company are not hard to discover. It has always had an ag-

gressive business policy, which, combined with a willingness to supply every demand in structural iron and steel work and boilers, and a central location, has made possible steady advancement. The company has the reputation of never being "stumped" on any structural proposition. Today, for instance, you will find men busy at work in the assembling department on the long steel smoke conveyor that is to connect a battery of boilers with the stack in the new United States custom house at Seattle. At another point you will see engineers laying out the trusses and beams of a bridge that will span a mountain torrent or a gorge. Here is one crew making a system of fire escapes. There is another putting the finishing touch on a heater.

The reader doubtless is more interested in the heater because it is one of the staples in modern construction where good hygiene is wanted.

The principle of the Phillips Hot Water Heater produces the largest volume of intense heat with the smallest consumption of fuel. The best authorities on heater construction, say that at least 70 per cent of the aggregate fire surface should be direct heating surface, but in the Phillips construction we have fully 90 per cent.

The center column running up through the center of the fire and the hottest possible place in the fire, carries fully one-half of the amount of water that passes through the Heater, producing rapid circulation, and consequently quicker action upon the temperature of the space to be heated. The fire pot is much deeper, contains a larger bed of fire than any other heater on the market. The combustion space above the fire is much higher and produces per-



In The Machine Shop

fect combustion with the use of all kinds of fuel. The volume of water just above the fire is kept at a tem-

perature so hot that the gases coming in contact with this surface do not condense and form the black, thick soot so common in heaters where such condensing surfaces are found. The baffle plate damper will be found very important in controlling the draft and utilizing all heating surface.

One of the desirable features of the construction is its simplicity from the ground up. The larger sizes being made in two sections can be rolled like a barrel through an ordinary door. The ease with which it can be set up, the time required to do this work are the important items for a contractor to consider.

The durability of the cast iron boiler for heating water has never been tested, that is to say, for the forty or fifty years that cast iron has been used for this purpose has not been sufficient to thoroughly test its durability. That it will last practically a life time is not disputed.

There are a great many points of merit that could be mentioned regarding the construction of this heater, all of which are good, reasonable, common sense features, and are in advance of the ordinary appliances that have been used for years by most manufacturers.

In fact the heating surface of the Phillips Hot Water Heater cannot be figured by the same rules or methods that have been in practice by engineers for reasons that the large portion of the heat is not applied to what might be termed "one-sided heating surface," but surface that is entirely surrounded by the fire. It is the only construction where the fire is entirely surrounded by water and water entirely surrounded by fire, thus giving almost double capacity from the same fire.

The illustrations show the reader the interiors of some of the buildings and give some idea of the varied character of the machinery necessary in a plant covering a field so wide. Imagine the amount of

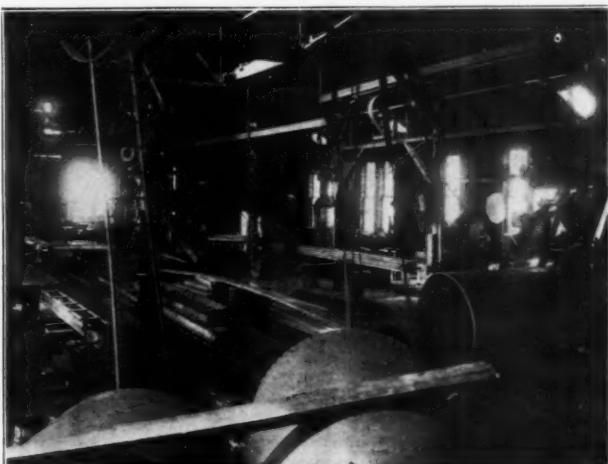


Showing Heaters Awaiting Finishing

technical knowledge necessary for the prompt production of a list of things like this:

Anchors, angles, area grates, bar steel, beams, belting, belt dressing, black sheets, boilers, boiler fittings,

boiler flues, boiler fronts, boiler grates, bridges, bridge cylinders, bridge steel joist, castings, cast grates, channels, cleanout doors and frames, coal chutes, coal hole rings and covers, columns, cast and steel, corrugated bars, culvert pipe, dipping tanks, door plates, duplex joist hangers, elevators, engines, steam, expanded metal, expansion bolts, fire escapes, fire proof doors, fire proof shutters, flues, flue cleaners, flue expanders, galvanized sheets, Gardner governors, Gardner pumps, girders, grates, I beams, iron stairs and steps, Johnson corrugated bars, joist anchors, joist hangers, joist ties, lintels, lubricators, manhole rings and covers, marine type boilers, metal lath, pig iron, pipe and fittings, plates, post caps, railings, reinforcing bars, return tubular boilers, rods, sand, foundry, safes, sash bars, shutter eyes, sidewalk lights, sky lights, stacks, steam gauges, steam pumps, steam engines, steel post caps, steel shutters, structural iron and steel, tanks, truss



Assembling Room, Heater Department.

rods, Van Dorn joist hangers, vault doors and wall ties.

The employes include civil engineers, draughtsmen, bookkeepers, stenographers, machinists, boiler makers, blacksmiths, molders, pattern makers, steam and pipe fitters and laborers.

In conversation with a number of leading business men of Marshalltown the fact was further gleaned that the Company has been able to make prompt delivery of all the products it manufactures, and this is really one of the most important factors in a manufacturing business. Patrons never have to wait. The peculiarly advantageous location of Marshalltown, the shipping facilities, stock on hand, complete equipment of the plant and close proximity to three lines of railroad that tap the country far and wide are conditions that have been of assistance to the A. E. Shorthill Company and make certain its future business.

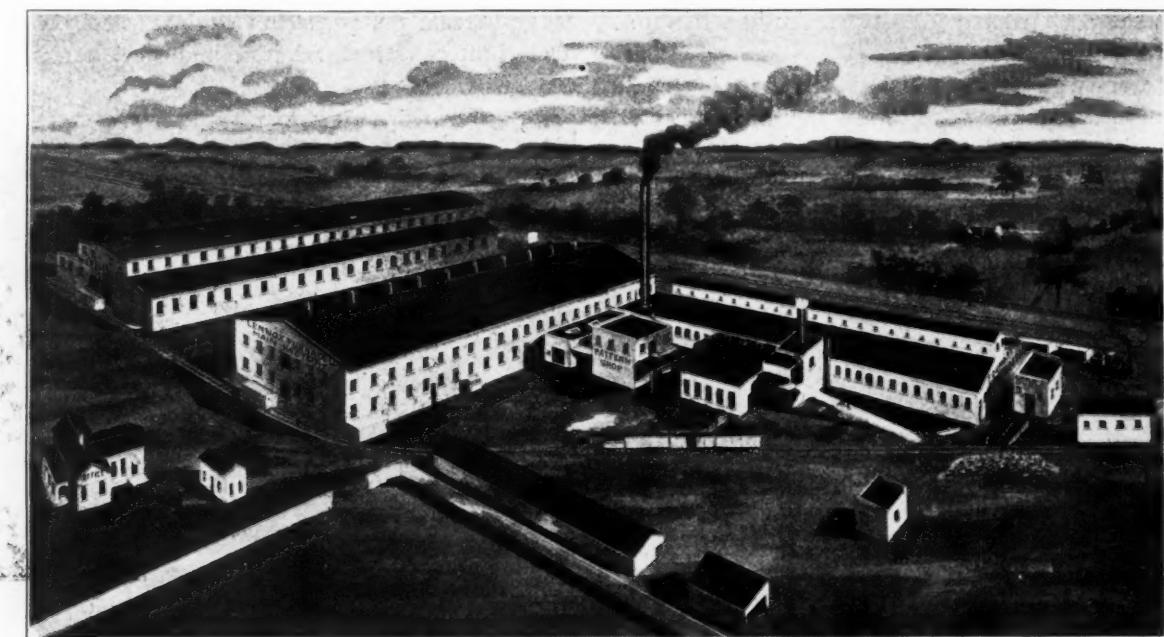
Contractors or others who will require a heater of the best quality may rest assured that they will secure prompt service from this company if they place an order with it.

Lennox Torrid Zone Furnace

MARVELOUS REVOLUTION IN HOT AIR HEATING WROUGHT BY THIS FAMOUS HEATER

WHEREVER you go you will see the Torrid Zone hot air furnace. The wonderful success that the Lennox Furnace Company has won with this heater is shown by the steady growth of the great plant at Marshalltown, Iowa. The company is one of the great institutions of this thriving center and its success has added much to the prosperity of the city. Two hundred men are employed in the factory and foundry and offices, besides a dozen salesmen are constantly on the road and as many more are employed by jobbers who handle the company's output.

ing out the problems presented by the furnace and devised a steel furnace built of steel plates riveted together like a boiler under hydraulic pressure. It was made absolutely gas tight. The steel, possessing quick radiating qualities, has proved a more powerful heater than iron, and the addition of an extra crescent shaped radiator has practically doubled the radiating power, making it the most satisfactory heater that is on the market. It is simple to operate as a stove, and is the most economical furnace that ever has been produced. The firepot is made of cast iron sections that are enclosed entirely within the steel shell



General View, Lennox Furnace Co., Marshalltown, Iowa

The fact that the plant has trebled in size during the last three years of its fourteen years of history, is of itself a proof of the merits of the furnace it makes, for if the product was inferior to some other, the business would not have grown; the building public demands the best, and if it does not get it the maker of the inferior article gives way to the one producing a better article.

The Torrid Zone furnace has revolutionized the heating of residences, schools, churches and other buildings. The cast iron formerly used in furnaces, and now used in many, showed many imperfections. The expansion and contraction under the influence of varying temperatures loosened the joints and allowed smoke and soot to get into the air chamber and vitiate the air. David Lennox spent many years in study-

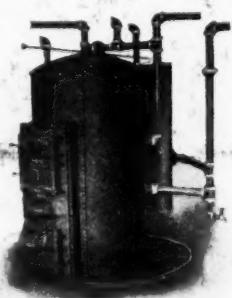
and put in place quickly within the fuel door. The parts can be easily replaced with new ones when worn out, without tearing down the furnace or pipes.

Mr. W. J. Heald, who has spent his lifetime in the furnace business, is general manager and vice president of the company. Mr. T. I. Wasson, for many years general auditor of the Iowa Central Railway, is secretary and treasurer of the company. These two men are in active management of the business, each owning one-fourth of its stock. Mr. D. W. Norris, Jr., editor of the *Times-Republican*, is president and the only other stockholder.

Every department is manned by experts. The output is close to five thousand furnaces per year, and the large sum of \$110,000 per year is now being expended in Marshalltown for the item of labor alone.



Torrid Zone Furnace



Combination
Hot Air and Water

Lennox Gasoline Engines

MARVELOUS GROWTH OF A MARSHALLTOWN, IOWA, INDUSTRY THROUGH PURE MERIT ALONE

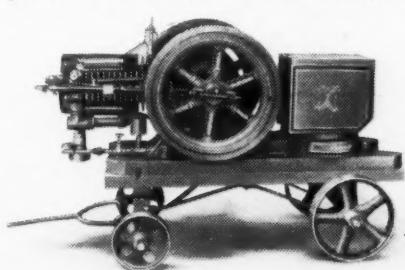
THE gasoline engine has come to be one of the necessities in the up-to-date contractor's equipment. It is needed in the operation of concrete mixers, conveyors, hoisting machinery and in numerous other ways. The carpenter, too, has use for it in the operation of saws and other machinery in his shop.

Another institution that interested the writer in Marshalltown, Iowa, while he was there visiting machinery men who are making things to help the carpenter and builder in his work, was the Lennox Machine Company, 40 Ninth avenue.

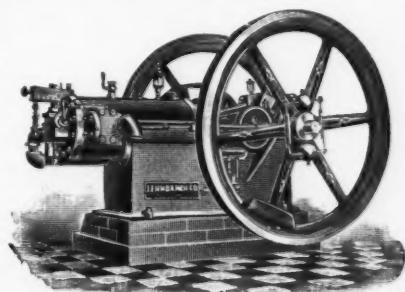
Here were the "O. K." engine, in two styles, water and air cooled, and the Standard, both of which are well

known the world over. The engines are used in every country for wood sawing and feed grinding.

David Lennox is president of the company, and Charles Glick is secretary-treasurer. These gentlemen have built their institution up till now it is one of the largest of its kind in the world. The company occupies a block of ground with \$30,000 worth of buildings, and fully equipped with machines and lathes, and housing over 100 busy workmen. Twenty-five years ago Mr. Lennox had a small repair business in Marshalltown, but his salesmanship and his inventive genius brought him to the front. Mr. Glick has been with him since 1893. Among the inventions of Mr. Lennox's creation are the steel splitting shears in use in all the great railroad shops and in all the principal iron works, and the pitless scale. But for the enlightenment of the carpenter and builder, attention is directed now to the gasoline engines. The "O. K." is a neat, compact little engine, mounted on trucks so that it is easily portable. It is made in three sizes, $2\frac{1}{2}$, 5 and 7 horsepower. It is equipped with an electric ignitor, so constructed that the contact points can be cleaned while the engine is in operation. The special features of this engine are its durability and ease of operation. The Lennox Standard horizontal gasoline engine is equipped with electric spark and hot tube ignitor. This engine is perfectly balanced and can be mounted on trucks when so desired. It has a friction clutch pulley. This pulley can be placed on the 5 or 7 horsepower "O. K." engine at a small additional cost.



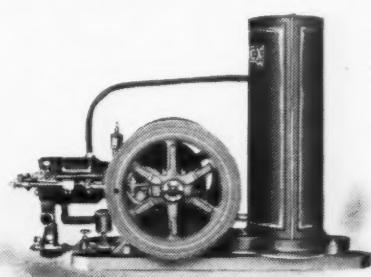
Air Cooled O. K.



Standard

Mention has been made of the pitless scale and the steel splitting shears. For years manufacturers had struggled to contrive a wagon scale which could be built without the expense of digging a pit and putting in costly timbers, to decay and add more expense for repairs. But the result of nearly every effort was a machine which was so costly to manufacture that its selling price was necessarily prohibitive, and therefore these efforts failed.

Mr. Lennox went to work on the problem and mastered it. He produced a pitless scale that was perfect, yet simple enough in construction to be manufactured within a reasonable price limit.



Water Cooled O. K.

The result was not achieved, however, on the first effort. Trial after trial has been made. Grief has been met and swallowed; defects discovered and remedied; thousands of dollars spent in experimenting; special machines devised and made to manufacture the scale parts economically, until today the Lennox Pitless Scale has been brought to the point at which it needs only to be explained and advertised to sell in tremendous volume. The sale on these scales has been enormous and future prospects give promise of doubling the employment of the factory within the next five years.

The writer was conducted through the vast plant of the company where scores of men were busy at the machines turning out the parts of engines. On every hand was the evidence of rush and push. It

matters not whether it is an "O. K." engine, a Standard, a pitless scale or a steel shears that is ordered, the company's equipment enables it to fill the order at once. The company has every advantages of location and shipping facilities which, combined with a strong management, assures its continued success. A fair test of its capabilities in meeting all demands is being made now when the

rush season is on, but the organization of the big plant moves along smoothly and without a jar, turning out its product to go to every part of the country.

Contractors who may require the quick delivery of a gasoline engine like any of those described may be assured that they will not have to suffer delays if they place an order.



MANUAL TRAINING

IRA S. GRIFFITH

Something the Boys Can Make

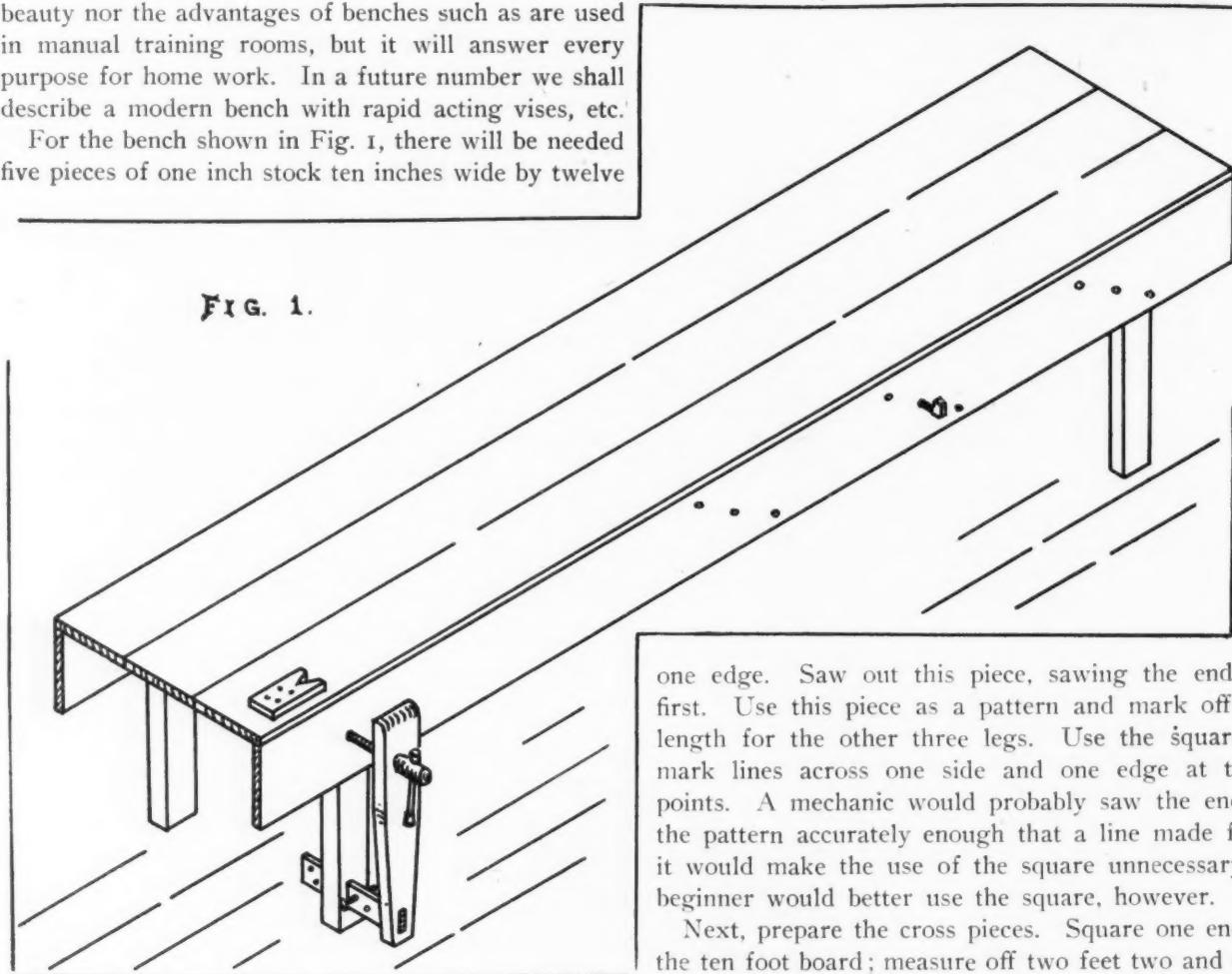
COMPLETE INSTRUCTIONS WITH WORKING DRAWINGS FOR MAKING A CARPENTER'S WORK-BENCH—
PROPER MATERIAL TO USE

IN RESPONSE to requests for a plan and description of a workbench, the following is offered. This is the plan usually used by carpenters. It makes a good, strong bench, one that can be built by any boy of average skill. It does not possess the beauty nor the advantages of benches such as are used in manual training rooms, but it will answer every purpose for home work. In a future number we shall describe a modern bench with rapid acting vises, etc.

For the bench shown in Fig. 1, there will be needed five pieces of one inch stock ten inches wide by twelve

two feet ten inches. It should be clean and sound.

Begin work by squaring a line across one side and one edge of the "two by four" as near the end as its condition will allow. Measure from this line two feet seven inches and square a line across one side and



feet long; one piece of the same thickness and width with a length of ten feet; one piece two inches by four inches by twelve feet. The one inch stock may be pine and should be mill-planed on two surfaces. The "two by four" should be mill-planed on four surfaces. It may be of pine also. The top, sides, cross-pieces and legs may be got from these. There will be sufficient waste for the lower part of the vise.

For the vise, secure a piece of oak mill-planed to one and one-half inches by five inches with a length of

one edge. Saw out this piece, sawing the end off first. Use this piece as a pattern and mark off the length for the other three legs. Use the square to mark lines across one side and one edge at these points. A mechanic would probably saw the end of the pattern accurately enough that a line made from it would make the use of the square unnecessary; a beginner would better use the square, however.

Next, prepare the cross pieces. Square one end of the ten foot board; measure off two feet two and one-half inches and again square a line. Cut out four pieces like this in the same manner as was done with the legs. One edge of each of these pieces must be straight and square. If necessary, joint, or plane them.

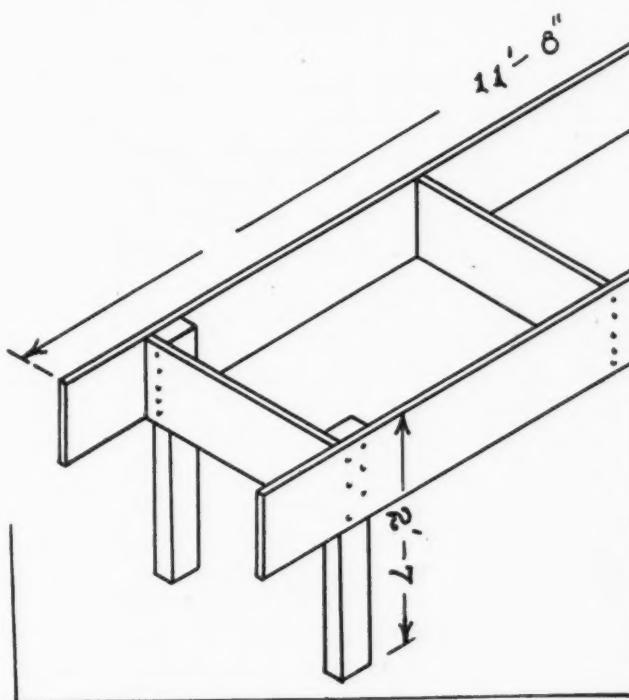
Two of these cross-pieces are to be fastened to the narrow edges of the legs as shown in Fig. 2. Place two legs on the floor with their narrow edges up and place a cross-piece on them. Fasten the cross-piece to the legs with one nail each. With the square, see that the side of the leg squares up with the edge of

the cross-piece, then put in the rest of the nails. It is a pretty good plan to start all of the nails into the board before attempting to nail any of them into the studding.

The side pieces may be prepared and placed now. Joint, plane straight and square an edge on each of two twelve foot boards. Square one end, measure eleven feet and eight inches and saw to length. The second piece should be similarly cut.

From each end of each board measure one foot then three and three-quarter inches and square lines across on outside of face and on joint edge. This is to indicate the position of the legs.

"Start" the nails between these lines. Turn the legs "on side"; lay a side on them and drive one nail home. Square the edge of the leg to the edge of the side piece—use the steel square—then drive the remaining nails. The other leg may be fastened, the



frame turned so as to rest this side on the floor and the other side placed and nailed.

Set the frame upon its legs, divide the space between the two end cross-pieces into three equal parts, square lines across the sides to show where the other cross-pieces are to be placed. Start the nails, place the cross-pieces and drive the nails home.

The three boards of the top must have each of their edges jointed. Two of them may be jointed irrespective of width, but the third must be so planed as to make the top of the same width as the frame. Square the frame by placing the steel square against side and cross-piece.

Nail the outer top boards to the side pieces as well as to the cross-pieces. Set all nails below the surface. Eight or ten-penny common wire nails will be about right for all the nailing.

After the top has been nailed, take a straight-edge and mark lines across each end to indicate where the ends of these top boards are to be sawed off. They should be of the same length as the sides, Fig. 1.

The vise may be made next. There are various ways of making this very important part of the bench. The kind which seems to be most commonly used by carpenters nowadays—aside from the rapid acting vise—is the one shown in Fig. 1.

In Fig. 3 is shown a vise in which the movable jaw is inclined toward the worker somewhat. There is an advantage in this kind of vise in that vertical

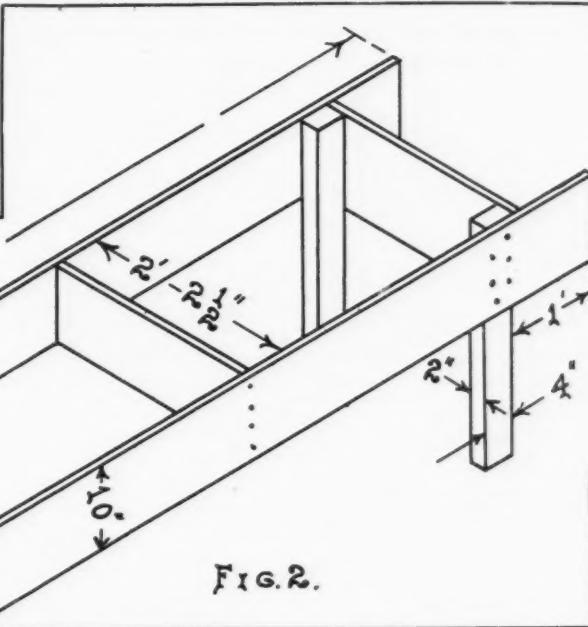


FIG. 2.

pieces can be held without exerting any side strain, or at most very little, upon the vise. This position of the jaw also holds the work farther away from the bench's end, which is often of advantage. With this placing of the vise jaw, a "two by six" is used for the bench leg, or two pieces of "two by four" may be cleated together.

To make the inclined vise, take the piece of one and one-half inch oak, joint its edges so that it shall have a width of five inches. Draw a center line, Fig. 3. Hold the piece against the bench in the position indicated in Fig. 3, and mark the location of the large hole for the vise screw. This hole should be bored in both bench and vise jaw. Its size will be governed by the size of the screw. The hole should be a little larger. In Fig. 3 the hole is bored in the middle of the ten inch board, and in the middle of the second "two by four" leg.

Insert the screw into the hole in the jaw and screw the face plate fast. Put the jaw in place against the bench and mark as indicated by the dotted lines, Fig. 3, saw and plane to this shape, rounding the top end as in Fig. 4.

The value of the grip of any vise depends upon its jaws being parallel. In Fig. 4 is shown the manner of adjusting this kind of vise to meet this requirement. The small piece with the holes in it slides in and out

through a mortise in the leg. A dowel pin or a bolt, Fig. 1, is passed through one of these holes and holds the jaw as desired.

Plane up the seven-eighths by two and one-half by twelve inch piece and bore one-half inch holes as indicated in Fig. 4.

With trysquare and gauge lay out a mortise in the jaw, Fig. 3, and cut it. Lay out and cut a corresponding mortise in the leg. The mortise in the leg should be cut slightly larger than the piece which enters it so that it may not bind the piece which enters it.

Fit the piece with the half inch holes into the mortise of the movable jaw. With the steel square hold its edge square to the face of the jaw and fasten the two together, using dowels, screws or nails through the edge of the jaw. Set and fasten to the inside of the bench leg the "nut" for the vise screw and the vise is ready for use.

The vise shown in Fig. 1 is somewhat easier to make. The hole for the screw is to be bored so that it will pass through the middle of the single "two by four" leg. The mortise for the seven-eighths by two and one-half inch piece with the holes in it is to be cut directly below this hole, that is, in the middle of the leg. It would better be laid out and cut, however,

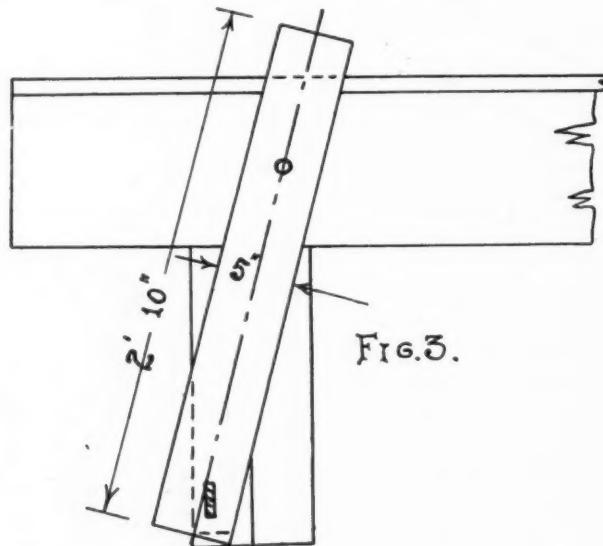


FIG. 3.

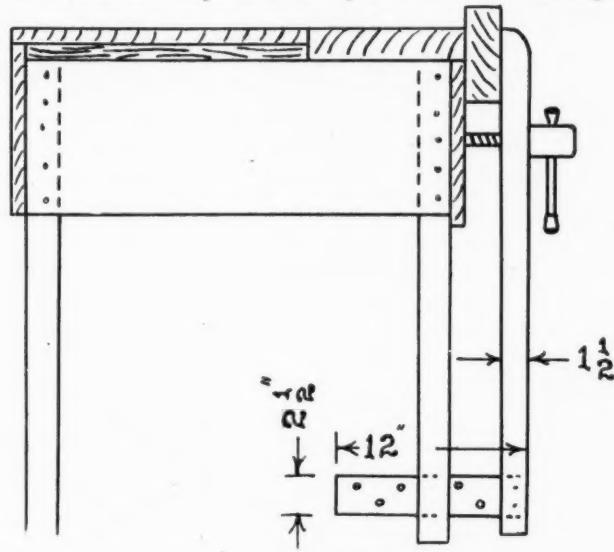
after the corresponding mortise has been cut in the movable jaw.

Square up the stock for the jaw to the width desired with a length less by an inch or two than the height of the bench. This is to keep the end of the jaw off the floor. The top should be rounded and the sides sloped from a point nine or ten inches below the top so that the width at the bottom shall be about three or four inches. Before putting the slope on the joint edge, lay off the mortise at the bottom and the screw hole at the top.

For holding long boards, bore a series of three-quarters or seven-eighths inch holes as indicated in Fig. 1. Make a wooden peg that can be forced into these holes. Whittle it so that it will wedge slightly

and cut it out so that it may have a "lip" to keep sprung boards up against the bench. Fig. 1.

For a bench stop, there are various devices in common use. Iron bench stops can be purchased. A couple of nails or screws put into the bench top are often used for holding thin stock. Sometimes mortises are cut and one-inch square hardwod plugs are snugly fitted. If this is done on a bench with a thin board top, such as this one is, a heavy block should be fastened to the under side, else the mortise would soon lose its shape and the pin would fall through.



Such mortises are usually cut slightly inclined at the top towards the worker. A block with a cut in one end does quite well, but is likely to injure the ends of soft wood. Fig. 1.

Fig. 4 shows a bench in which the top has been made more substantial by the placing of a heavy plank on the working side. That there might be no offset, the two lighter boards were raised to a level by the placing of thin pieces upon the cross-pieces. Care should be taken in the selection of a plank for this purpose to get one that will keep its shape.

Of course, the dimensions given are merely suggestive. The bench might be made longer, more cross-pieces should then be added, or shorter. The height given is about the average. A tall man would probably want it a little higher; a boy or short man lower.

Deposit Vaults for the Home

Among the novel features which add to the completeness of the plans for new houses, and particularly for apartment houses, is the specification for safe deposit vaults built in the walls. These wall safes are a great protection against burglary, as their location is known only to the builder and tenant. These safes are strongly made and form a part of the wall. The openings are but hand holes, large enough, but easier to guard, with less expense to adjust evenly in walls. Little more than the dial and its small knob is seen—no handles, no bolts, nor hinges.



Wall for Basin

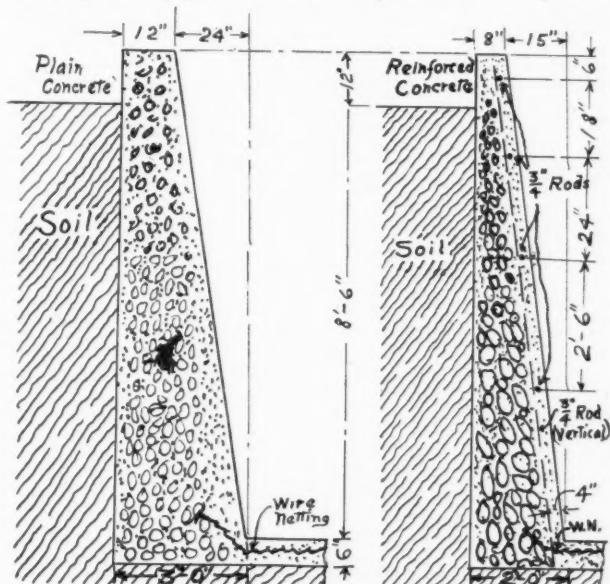
To the Editor:

We wish to build a reservoir 24 feet by 30 feet by 9 feet 6 inches inside measure. Will be banked up on outside within a foot of top with dirt. Sides built 3 feet wide at bottom, 1 foot at top; bottom 6 inches thick. Four iron rods ($\frac{3}{4}$ inch) in each side wall laid lengthways to reinforce concrete.

Materials: Clean river sand, 3 parts; cement, Portland, 1 part; all the small gravel and stone this will hold. Bed is to be proofed by Sylvester process. Will this be all right? Any suggestions appreciated.

WHIPPLE BROS.

Answer: In constructing a concrete wall for a basin 24 feet by 36 feet by 9 feet 6 inches deep there is little pressure



strain on the wall when same is filled, as the soil on one side and the water on the other equalize each other. If the basin is always full of water a 4 inch concrete wall would do; but, as the basin may be drained at times, a retaining wall for the soil is essential. This is shown in the two sketches, both the plain and reinforced concrete being about equal strength; either will withstand four times the strain a basin of above dimensions can thrust upon it.

If the plain concrete is used the composition should consist of one part cement, three parts sand and five parts gravel of pea to walnut size, together with some larger stones. Before leaving a day's work, rods, pipes or other irons about one inch thick and one foot long, should be set half their length into the concrete, letting the other half project above, thus keying the various batches of concrete together. These keys are set in the center of the wall and spaced three to four feet centers. Do not save labor in tamping the concrete into the forms.

For the reinforced wall use one part cement, two parts sand and four parts pea to walnut gravel, and add moistened stone same as for plain concrete. Place steel rods as shown. Should the strongest work possible be desired, no stone over six inch diameter should be thrown into the concrete, which

will admit placing the vertical rods within four inches of the soil side of the wall. In this position they will act as a counterfort and be stronger. The vertical rods should be placed four feet centers and should be tied to the top horizontal rod with No. 8 wire.

Always make work continuous with as little delay as possible unless keyed together as mentioned above. Tamp hard and keep well moistened for six or eight days, when the forms may be removed. The water side of the wall should then be plastered with a fourth inch coat of one part cement and two parts sand mixed to the consistency of stiff mortar; wet the walls well just before plastering and keep moist for a week. When dry add two applications of Sylvester process of waterproofing.

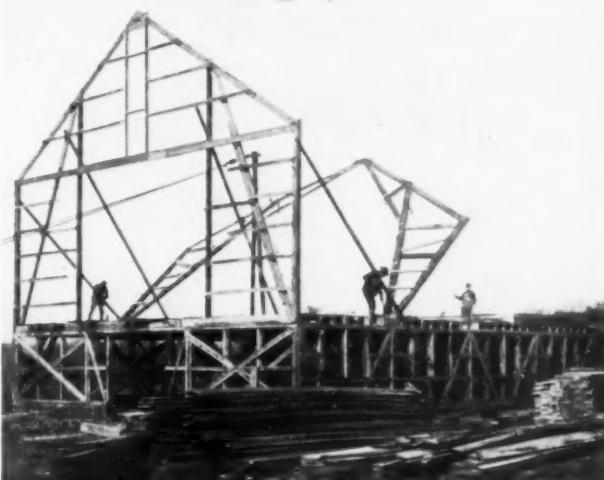
The bottom should be six inches thick of same concrete as for walls and a wire fence netting of six inch mesh should be placed not less than two inches below top of concrete as shown. Finish with plaster and waterproofing, same as wall.

FRED W. HAGLOCH.

A Plank-Frame Barn

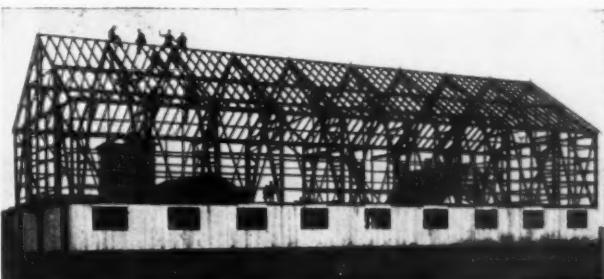
To the Editor:

Novelty, Ohio. The accompanying pictures show some of the construc-



tion of a plank frame basement barn put up last fall in Newbury, Ohio, for dairy purposes.

The barn is 40 ft. by 120 ft. and 39 ft. from ground to peak. The first picture shows basement framework and how bents were raised. The other shows completed frame



when last rafter was being put up and the basement siding on. There are sixteen double windows and six single windows in the barn. The work was started Oct. 29, 1907, and in nine and one-half working days of nine hours each, with eight men working, the barn was as shown in photo. W. S. Ford, of Burton Ohio, was the contractor.

O. H. ALBAUGH.

◆
Shelving for Stores

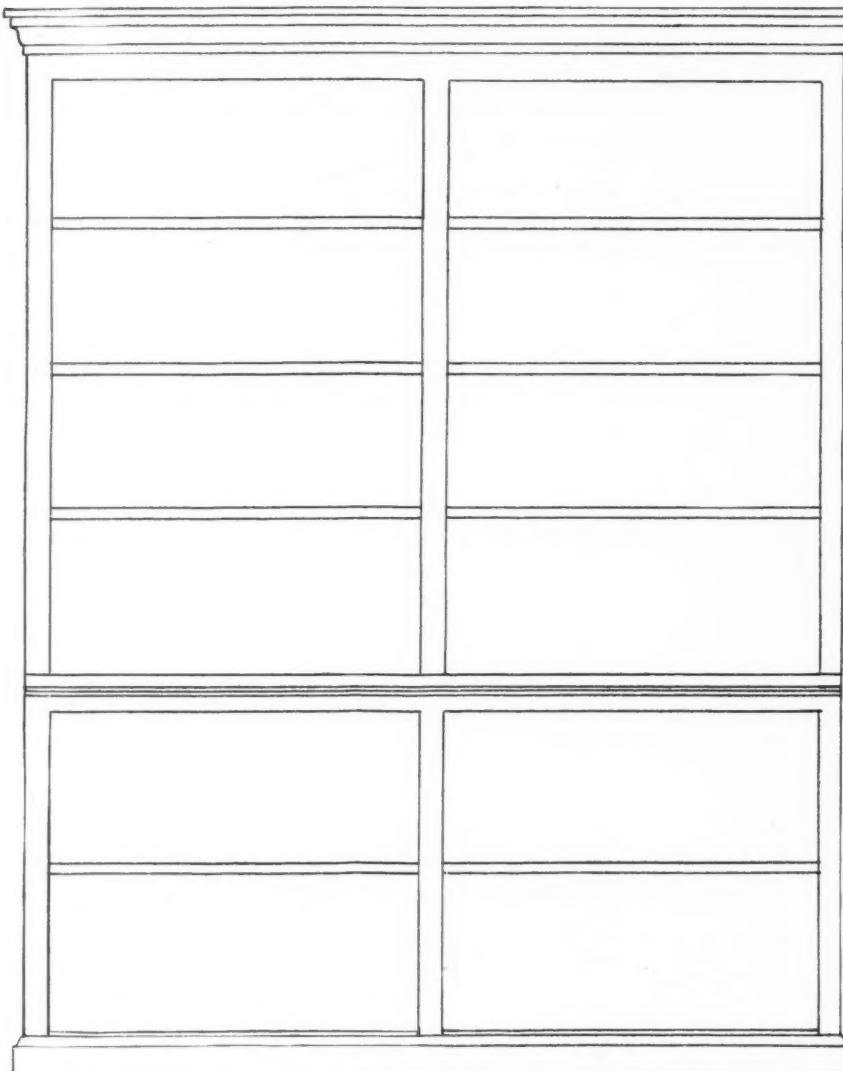
To the Editor:

Valley City, N. Dak.

I have taken your magazine for two years now; but have seen nothing on shelving for stores. Can you help me in that line?

W. M. J. PETERMAN.

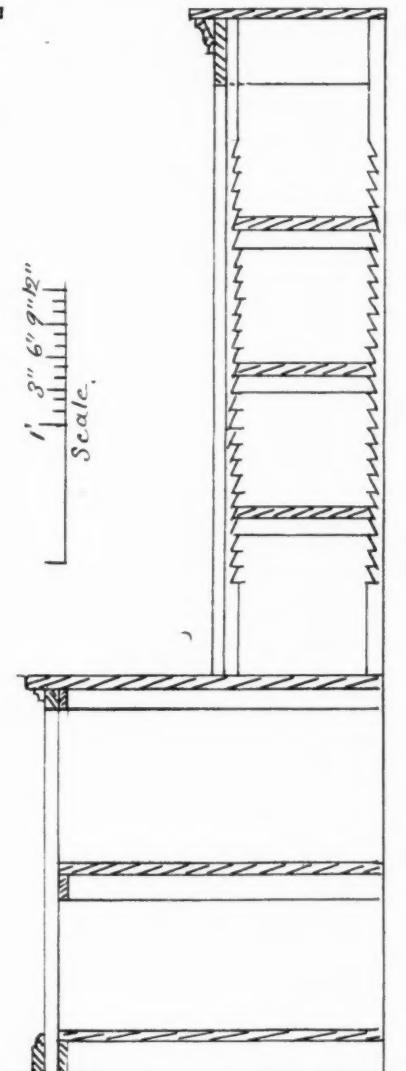
Answer: I give here a front elevation and section of a design for shelving suitable for the average store. The sections are intended to be about 3 feet between the standards.



Front Elevation

The bottom part is about twice as wide as the top and forms a countershelf. The first shelf is raised off the floor about 4 inches. The top part has saw tooth strips nailed to each edge of the standards so that the shelves may be adjusted.

I. P. HICKS.



Section.

◆
Publicity Needed

To the Editor:

Swiftwater, Pa.

For the last two years I have been looking for a blind staple sticker, the kind used for repairing window blinds. If you could help me out in this I will be very thankful.

GEO. H. WARNER.

Answer: This is an instance which illustrates the fact that now and then it is difficult with a fairly good equipment of catalogs and with the advertising of the trade papers before one to lay hand on some special machine that is

◆
Strength of a Three-Inch Post

To the Editor:

Roadhouse, Ill.

Having been a constant reader of your valuable magazine since its beginning, I now request the following information:

wanted. In order to be able to answer questions of this kind, the writer frequently requests complete circulars and catalogs from machinery people and has quite a fair equipment of these things. Yet, it is a peculiar fact, after quite a lot of research, that this particular machine has not been found. There have been other instances of the same kind, enough of them to suggest that the makers of different machines, which are frequently wanted, should make it a point now and then, to illustrate or feature their machines in the advertising pages, or in some manner publish a list of the different machines they make, so that the seeker after machinery can find what he wants. Names of the people thought likely to have this machine were furnished this correspondent by mail.

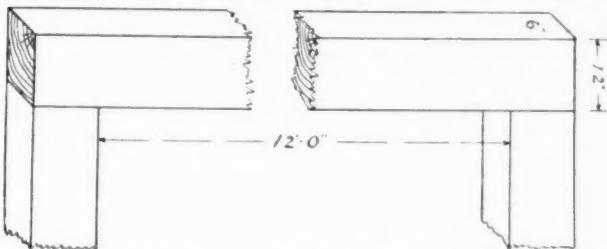
J. CROW TAYLOR.

Safe Load for a Beam

To the Editor:

Convent, La.

I am interested in the strength of materials, and offer for solution a beam 6 inches by 12 inches, the span to be 12 feet, supported at the ends. Working strength is 800 pounds per square inch, load to be distributed. What will



be the safe load for the beam? Would like to know also what provisions are made for weight of beams and for bending moments in different spans. B. P. TUREAUD.

Answer: The best way to work this question is to use the well-known formula

$$W = \frac{S b d^2}{9 L}$$

which is expressed in words thus: The safe uniformly distributed load in pounds for a rectangular beam is equal to the safe unit fiber stress multiplied by the breadth in inches, and by the square of the depth in inches, and the product divided by nine times the span in feet."

In the formula W stands for the weight or load; S for the working strength, or "fiber stress" as it is termed; b is the breadth; d the depth squared; and L the length. Your calculation is as follows:

$$\frac{800 \times 6 \times 12 \times 12}{9 \times 12} = 6400 \text{ lbs}$$

The foregoing formula takes into account the bending moment as well as the fiber stress, being a combination of two formulas; one dealing with the bending moments for rectangular beams; the other with the breaking weight or "modulus of rupture," as it is termed in the books.

It is usual to neglect the weight of the beam in short spans, but in long spans the weight of the beam is added to the load, and calculations made accordingly.

T. B. KIDNER.

Obtaining Cuts of Molding

To the Editor:

Barrie, Vt.

Will you inform me through the pages of your journal of a method by the square to obtain the cuts of molding in paneling of the stair strings, as shown in the enclosed sketch? E. BLAINE.

Answer: In Fig. 1 is shown the face of the stair string with diamond shaped panels, as shown in Mr. Blaine's

sketch. To begin with, all cuts of moldings of this kind should be made in a miter box. Then the question is, how to find the angle on the square by which to make the proper cut on the miter box.

In Fig. 2 is shown an enlarged panel with the application of the square for finding the miter line, or the line of junction of the molds. In this, it will be seen that there are two angles in the panel. The sharper one is known as an acute and the other as an obtuse angle. The former is less than 90 and the latter more than 90 degrees. However, by this method of finding the miter line for one, also answers for the other, because when the blade is giving the miter line for the acute, the tongue is giving it for the obtuse. In the illustration, we have shown the application for both, and it will

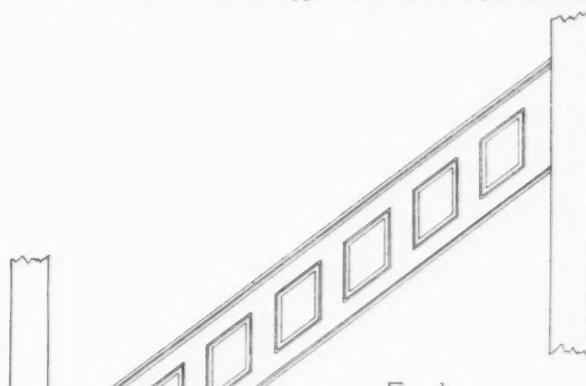


FIG. 1.

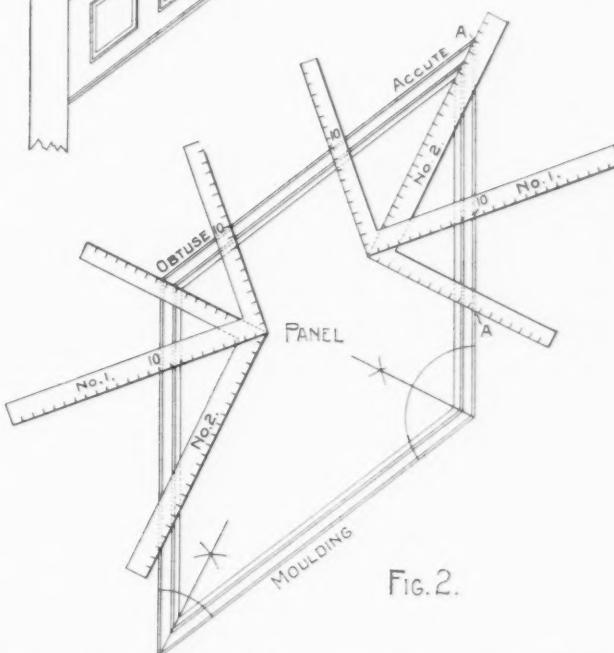


FIG. 2.

be seen that the blade and tongue of like squares are resting parallel with each other. Now, as to the placing of these squares to get the proper angle, simply take like figures on square No. 1, say 10 and 10, place so that these figures are at the edge of the panel, as shown, and with the heel of square No. 2 resting on the former, and with the blade intersecting the corner of the panel, the figures intersected by the edge of the panel, as at A A will be the figures to use to make the cut on the miter box for either angle. However, this is not the usual way of finding the miters for this kind of work, but the question was asked "How to find the cuts with the square?" and we give the foregoing in answer.

The same results may be had by bisecting the angle with the compass, as shown in the two lower corners of Fig. 2, and by setting a bevel square to the angles thus formed,

obtain the miter in this way. A more common way, however, among workmen, is to take a block of any convenient width and with parallel edges and with it set each way in the corner mark along the outer sides, the crossing of these lines will be the point for the bisecting or miter line.

A. W. WOODS.

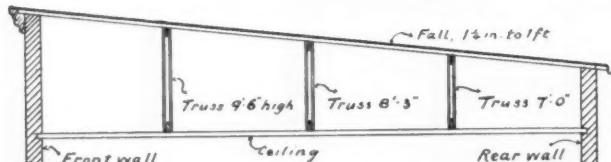
Roof Framing for a Store

To the Editor:

Durango, Colo.

I am going to do carpenter work on a storage building 50 feet wide and 50 feet long. The roof to slope from front

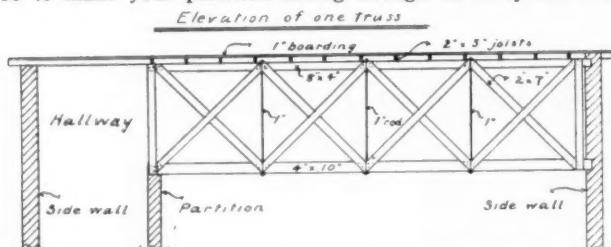
Sectional view through trusses



to rear and be covered with tin; there is a partition running through in second floor for hall 10 feet wide, leaving the other room 40 feet wide. This is to be used for a lodge room. How should I frame the roof and of what size material; would you recommend a lattice truss?

LEONARD ZIPPERIAN.

Answer: The simplest way to roof the building would be to make your partition strong enough to carry the ends



of trusses, 40 foot span, and to frame three simple plank trusses as shown in the drawings. Bottom chords 4 inches by 10 inches, top chords 4 inches by 8 inches; bracing, double (that is, on each face of truss) of 2 inches by 7 inches, well spiked or treenailed to chords. Vertical rods of 1 inch iron with nuts and washers top and bottom. The last or narrowest truss is made of sufficient depth to safely carry the load; and the other trusses have an added depth to give the roof pitch.

T. B. KIDNER.

Value of Sub Floors

To the Editor:

Logan, Nev.

Please tell me the necessity of sub floors in a house in a warm country. Building is two story, hollow concrete blocks.

G. E. MCGILVARY.

Answer: As far as warmth is concerned, there may not be any necessity for the double floor for houses in warm countries. There are other reasons for double floors besides the heat and cold question. The rough floor is a great convenience to work on during the construction of the building, and in case of a brick, stone or hollow block building, the rough floor is almost indispensable. Even if one did do without it there would be the labor of covering the most part of the floor space with a temporary floor to work on during the construction of the building.

Then again the finish floor can not be laid in advance, so it can be used to work on, for if so it would be spoiled, and unfit to be seen when the building was completed.

If hardwood floors are wanted, such as maple, birch or oak, the best job can be obtained with the $\frac{3}{8}$ thickness laid over a $\frac{1}{8}$ sub floor; the $\frac{3}{8}$ flooring is not thick enough for a single floor. Rough floors ought to be laid diagonal and the finish floor laid across them. The finish floor should

never be laid in a building till the plastering is all done and thoroughly dry; in fact, if a nice floor is wanted, it should be the very last part of finishing the building. All the base boards, casings, and door hanging, in fact everything, should be done before the finish floor is put down. Carpets are not used as much now as formerly, and nice floors are much desired, and these are not possible without the first rough floor to take the wear and tear of the building construction.

If anything like a good building is desired, it is false economy to dispense with the rough floor, no matter what the climate may be; hot or cold, the rough floor has merits that make it worth while to put in. It also adds largely to the strength of a building, both in the floor and for wind pressure when it is a second story rough floor.

I. P. HICKS.

Sheathing Inside and Out

To the Editor:

Louisville, Ky.

In looking around among new frame houses that are being built there is to be discovered every once in a while something new or something different. In looking after these things the other day I found a new house going up in which the storm sheathing, instead of being put on the outside, was put on the inside of the studding.

Inquiry as to the "whyfore" of this brought the explanation that the builder thought it was better that way, to use the inside sheathing as a base for his plastering and lath and plaster against it by first running some lath up and down the wall to hold the regular lath off far enough from the sheathing to give the plasterers room to work behind it. Then the sheathing would furnish a sound and positive backing for the walls. Another argument was that when the sheathing is put on the outside and then the weatherboard, there is some tendency for the moisture to get in between the two and cause decay, so it was thought better to have the sheathing inside and the weatherboarding simply as an outside protection on the outside of the studding. Talking over the matter with others, I found there was a difference of opinion in regard to this, and some contended that sheathing on the inside is a mistake instead of an advantage, and that plaster will break and fall from it quicker, if anything, than the regular lath, because it has no spring to it, and a bump will cause it to break; whereas, if it had the spring of the regulation lath, it would not do so. I would like to have an expression from readers of the AMERICAN CARPENTER AND BUILDER on this subject of the relative advantages of outside and inside sheathing.

L. K.

Concrete Block House

To the Editor:

Wallace, Neb.

I hereby send you a picture of a neat and substantial



house of cement blocks I have built this winter twelve miles south of Wallace, in Hays County, Nebraska.

H. J. RASMUSSEN.

Roof Design for Colonial House

To the Editor:

Pottstown, Pa.

I am a reader of your magazine, and am at present thinking of building a home and have the plans pretty well laid, excepting the roof. I would be very thankful if you would suggest a few roof designs for a double front, colonial house.

pitch and the dormers made with mullion windows in order to get a greater width of dormer. The main cornice is wide, with a deep frieze and dental work. The gables of the dormers should be shingled, also the sides and space each side of the window on the front. The ridge cresting for main roof and ridge of dormers should be not less than $1\frac{3}{4}$ inches thick and about 10 inches high at highest point on

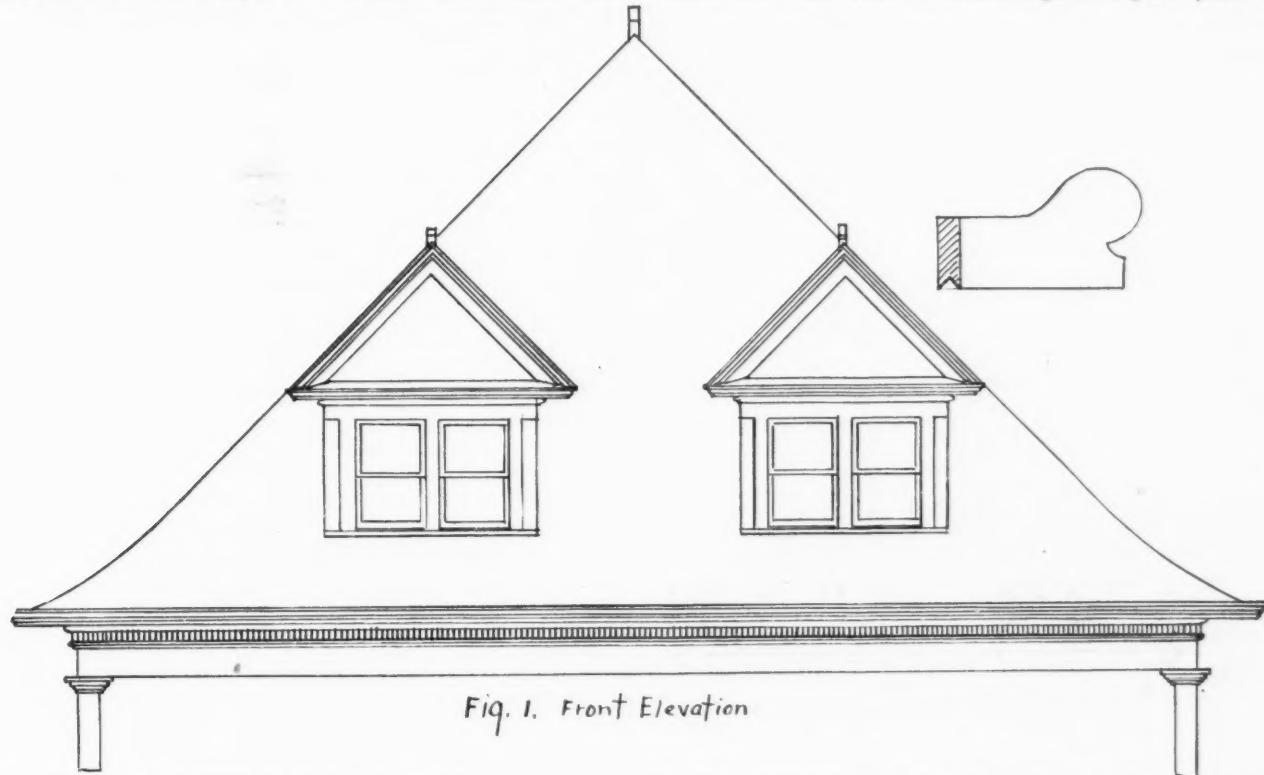


Fig. 1. Front Elevation

The width of the house to be about 38 feet.

PAUL L. BROOKE.

Answer: The house being a double house and somewhat wide, I think a hip roof with wide cornice and wide dormers would give it a good appearance. Would also put on wide corner casings with mold caps, Fig. 1. The roof is half

the end. This cresting can be made of wood, and if of wood, it is best made of white pine.

Fig. 2 shows another suitable design, differing from the first in that it has only one dormer. This is placed in the center of the house and has a space between the windows to widen the dormer. This has a hip roof and corbal

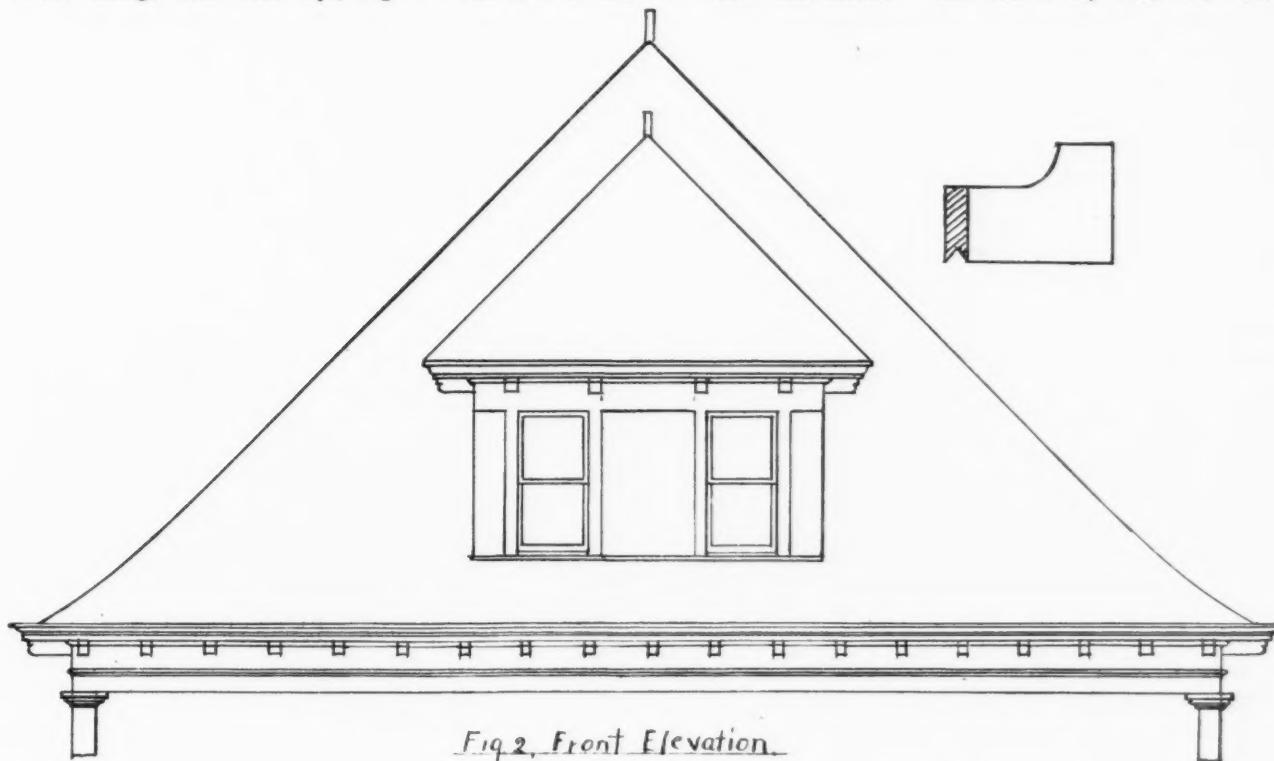


Fig. 2. Front Elevation.

brackets under the cornice, with bed molding cut in between the brackets. The dormer should be shingled up to the frieze.

The main cornice is wide with corbal brackets underneath and bed mold cut in between. These corbal brackets look nice and add very much to the appearance of the cornice. We think either one of these designs suitable for the house, although the arrangement of the windows in the second story and the style of porch in front might be such that some other style of roof would be better; that we could only tell by seeing the entire layout of the porch and front rooms of the house.

I. P. HICKS.

♦ A Well Built Barn

To the Editor:

Churchtown, Pa.

I am sending you herewith a photograph of a frame plank barn which I built the past summer. This barn is mortised and tenoned throughout, and is said to be one of the best framed barns built in this vicinity for a number of years.



It is 46 feet by 74 feet, and is 18 feet from the floor to the plate. This barn was built with two floors and two mows and nice stables underneath. There is also an addition built to the barn of the same height. This is 21 feet by 30 feet, having a corn crib on each side and a floor through the center, and a cellar underneath arranged for handling tobacco. The best of timber was used.

F. GLASS.

♦ Proper Paint for Tin Roof

To the Editor:

Philadelphia, Pa.

We have read with much interest, in your December issue, an article on painting, which includes suggestions for the care of tin roofs. These suggestions are, on the whole, excellent, and we are glad to see them given publicity in this manner. We must, however, take exception to the author's recommendation of graphite paint for this purpose.

If you are familiar with the work of the joint committee on tinplate, appointed by the National Association of Master Sheet Metal Workers to investigate matters of importance to the roofing trade, you will know that one of their first duties was to investigate the matter of painting tin roofs. We quote from their report on this subject, read before the annual meeting of the association at Indianapolis in 1906:

"The paint should be of the best metallic brand, pure linseed oil, well rubbed in; litharge only as a drier. No patent drier or turpentine should be allowed. Graphite and coal-tar paints are positively injurious to tin, and should never be used—neither should cheap paints."

"Six months after laying, the roof should have its third coat of paint."

These recommendations, we remind you, were made as the result of very careful investigations carried out by the committee. The caution against the use of graphite paint is, we believe, endorsed by every leading tinplate manufacturer, and by leading tin roofers generally. We mention

no particular brands of graphite paint in this connection, as our experience has been that the high-priced graphite paints give as much trouble as the cheaper kinds.

The committee in its investigations has run across many interesting cases in which graphite paint has been used alongside of other, non-injurious paints, with the result that trouble has been experienced with the graphite paint, and the balance of the roof has remained in perfect condition. Therefore, we regret, in the interests of the trade and of the reputation of its products, that this recommendation should have been made through your columns.

N. & G. TAYLOR CO.

Answer: The writer has taken up this subject of the effect of graphite paint on tin plate with a number of prominent painters from all sections of the country, at three recent Master Painters' conventions. Only one of all those spoken to had ever heard that graphite paint was injurious to tin, although all agreed that Prince's Mineral Brown was probably the best paint that could be used on a tin roof. The suggestion was made that as graphite can be thinned down almost indefinitely, there might be a tendency to apply it too thin, and in that case it would be little more than an oil coat. Oil alone, with no pigment, or with but little pigment, is more or less porous, and will permit water to pass through and affect the metal. Several recommended graphite as an excellent paint over a priming coat of mineral brown.

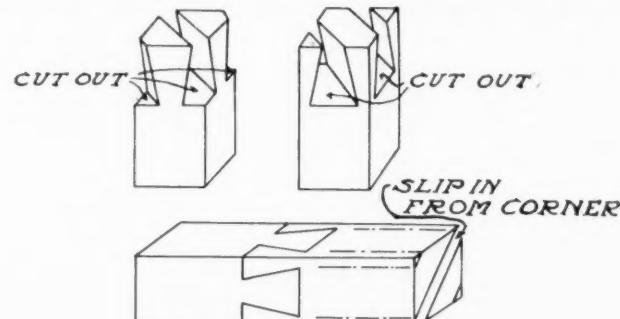
EDWARD HURST BROWN.

♦ Answer to Dove-Tail Block Puzzle

To the Editor:

Philadelphia, Pa.

The accompanying is a sketch illustrating my solution of Mr. J. B. Hoffman's dove-tail block puzzle in the March number. I can make one out of a block quicker than the time



it takes me to draw this sketch, as I am no draftsman.

Is there any reader of the AMERICAN CARPENTER AND BUILDER who knows how to make a Japanese dove-tail? If so, I would be glad to see a sketch by him in this column.

O. B. FETTERS.

♦ Another Block Puzzle Answer

To the Editor:

Excelsior Springs, Mo.

In Mr. Hoffman's dove-tail puzzle, the dove-tails do not run straight through as most people think, but run diagonally through. It is put together cornerwise; then, when glued together and smoothed up, if the points are perfect they look as though they run straight through, making a neat puzzle.

W. T. COURTNEY.

♦ Paint for Basement Ceiling

To the Editor:

Akron, Ohio.

I have a basement where the flooring is surfaced, but the joists are rough. Would kalsomine adhere to it and not peel off; or what would be the best? JOHN PARTSCH.

Answer: A good kalsomine, or, better yet, a so-called washable cold-water paint would in all probability give very good satisfaction.

EDWARD HURST BROWN.

PRACTICAL TRADE APPLIANCES

Metal Ceiling and Side Walls

The old adage, "Necessity is the mother of invention," is possessed of greater and more far-reaching truth and force than is apparent at the first glance. Supply and demand are said to be complementary, yet, as a rule, demand precedes supply and stimulates invention or constructive genius to produce the thing demanded. In these times many new things are constantly being devised, advertised and, so far as possible, forced upon the attention of the public in the hope of exciting a demand. Sometimes such overtures succeed, it is true, but scarcely ever where they do not fill some "long-felt want" or public yearning, except, indeed, when they act the part of successful and advantageous substitutes for things already in use.

A remarkable instance of a demand, none the less real because it has not found expression in words, is seen in metal ceilings, which though less than twenty years in use, have won wide, almost universal favor and are through certain modifications, coming to occupy an ever broadening field, to the extent of which it would be unwise to set arbitrary limits.

Like most advancements of real and lasting value, metal ceilings were in the nature of an evolution. Their suggestion was found in the corrugated iron ceilings that preceded them and rendered highly valuable service to the builder, the elements of a beauty and finish being the only things lacking.

In addition to being highly ornametal and attractive, metal ceilings possess many characteristics of a decidedly utilitarian nature, which would seem quite sufficient to alone justify

light weight they reduce to a minimum the strain upon trusses and joists. They neither crack or fall as plaster is prone to do, nor shrink as wood often does.

The field for metal ceilings is almost universal and is constantly widening. They are largely employed in dwellings, vestibules, apartment houses, bath rooms, kitchens, banks, buffets, restaurants, theaters, public halls, churches, educational institutions, and in many other places.

We illustrate herewith a view in Lanham & Sons Company store, Rome, Ga., showing the application of "The Edwards" Gothic Ceiling Design No. 1966, one of the many handsome and artistic patterns manufactured by the Edwards Manufacturing Co., "The Sheet Metal Folks," main office and works, 401 to 417 Eggleston avenue, Cincinnati, Ohio.

The company are at the present time arranging and expect to issue shortly a new catalog "A," which will contain 148 pages, illustrating their complete line of metal ceilings and side walls, together with other useful information for carpenters, contractors, etc., and will be pleased to forward copy of same to interested parties on request.

The Wolverine Tubular Furnace

The Wolverine Furnace manufactured by the Marshall Furnace Company, of Marshall, Mich., is based mechanically on the tubular construction idea. This tubular construction means that large, heavy, cast iron tubes run diagonally through the firebox or combustion chamber of the furnace. These tubes connect with the cold air supply at a point near the base of the furnace and extending upward through the body of the combustion chamber and open through the dome into the warm air chamber. Around these tubes all the heat and flame has to pass in escaping to the radiator above. The tubes being much larger at the top, or outlet, than at the bottom, or inlet, the circulation caused by the heating of the tubes draws immense quantities of additional cold air up through the furnace. As an extension of these tubes runs from the bottom of the combustion chamber downward and away from the firepot the cold air does not become heated until it rises to a point even with the bottom of the combustion chamber. After the air reaches this point, it is forced upward because of the conical shape of the tubes and action of the heat. The currents of air passing through these tubes are so strong that it is easy to throw heat to isolated portions of the house and those rooms badly exposed to wind and weather. Although the flow of air is rapid, the immense radiating power of the furnace thoroughly warms every particle of air to the right temperature. All radiating surface is in intimate contact with the fire, but not so close as to



their slight increase in cost over lath and plaster. Closely joined, or interlocked, so as to make them easy and economical to install, they present an almost air-tight surface and being incombustible, they tend to greatly protect floors and woodwork in cases of fire, and have many times, by preventing the spread of flames until the arrival of the fire department, saved buildings from destruction. Being of

their slight increase in cost over lath and plaster. Closely joined, or interlocked, so as to make them easy and economical to install, they present an almost air-tight surface and being incombustible, they tend to greatly protect floors and woodwork in cases of fire, and have many times, by preventing the spread of flames until the arrival of the fire department, saved buildings from destruction. Being of

superheat the air. Another thing about these tubes is, they cannot be burned out. As fast as heat is generated on the outside of these tubes it is radiated through the iron and absorbed by the air on the inside, and as the air must move through the tubes as long as there is any fire in the furnace, therefore cold air must be constantly taking the place of warm air, absorbing the heat as fast as it is generated and radiated. The volume of heat passing through the tubes increases in proportion to the heat applied. Wolverine Furnaces burn hard or soft coal, wood, coke or natural gas. Due allowance is made for expansion and contraction in all parts and every furnace is set up and rigidly inspected before leaving the factory. Write them for their descriptive catalogue and circular, "Wolverine Furnaces."

Runyan Concrete Machine Company

The Runyan Concrete Machine Company, of Canal Dover, Ohio, are manufacturing a line of concrete machinery designed especially to meet the requirements of carpenters and builders. Their block machine with the vertical core is the only successful mechanical combination on the market that will make either equally as well, either side face or down face blocks; furthermore, it is the only machine that will make a down face block and not tamp it on its face. It will make the standard widths (8 inch, 10 inch and 12 inch) on one width pallet, thus saving two-thirds of the money necessary to be spent for pallets with other machines to obtain similar results. They guarantee to make from 10 per cent to 25 per cent more blocks than can be made on any other machine; blocks are made in two sizes, 24 inch and 32 inch lengths.

Their small machine with the longitudinal- horizontal core is distinctively their own invention. The blocks made on it are indorsed by the best authorities on concrete construction. It also possesses the qualification of making different width blocks on one width pallet; the extreme length of this block is 16 inches; widths 8 inches and 10 inches.

The automatic tamper is an inovation in itself; this tamper is the result of two years' experimenting by competent mechanics. It is simple, durable and easy to operate; it is automatically adjustable, the strokes being regulated for any number, 50 to 250 per minute, while the length of this stroke is about 3 inches. A force not to exceed $\frac{1}{4}$ H. P. is necessary to operate it. Another important feature lays in the fact that they can tamp with it in any direction and at any angle, using any shaped rammer to meet the requirements. This tamper has been seen, examined and tested by mechanical experts with the result that they have the highest indorsements for it.

They also manufacture a combination screen and mixer which possesses the unusual qualifications of being able to screen and mix at the same time, or will perform either operation independently of the other. This is one of the greatest labor-saving devices on the market today, and the company has letters showing that it is doing the work of six men, though requiring but one attendant. Any one contemplating installing concrete machinery of any kind should get in touch with this company.

New Ceiling Catalogue Free

We herewith present two illustrations taken from the catalogue of Wm. Foster & Sons Company, whose factory and main office is located at Springfield, Ill. They issue an eighty-seven page catalogue devoted exclusively to metal ceilings and side wall material.

This firm takes great pride in the fact that they manufacture the only beaded metal ceiling on the market in which the bead is cut in the die after being cast at the foundry. The common way of doing this is to cast the bead in the iron die at the foundry, and in cooling off there is an irregular shrinkage which causes the field plate to shrink more or less than the border plate. This makes imperfect plates and causes a great deal of trouble in erection. Where a square and accurate plate is used one-third of your time is saved in



Notice Sliding Sleeve Damper. Patented.

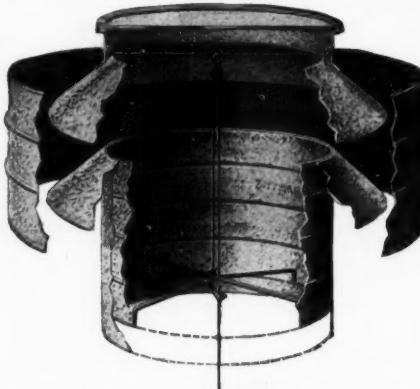
degree of opening desired, and is storm and dust proof, opened or closed.

Burt Ventilators are made with glass or metal tops as desired, and can be arranged to close automatically by heat in case of fire.

Send for our new 80-page catalog giving fine illustrations of mills, shops, foundries, and residences where Burt Ventilators are in successful use.

The Burt Mfg. Co., 500 Main Street, Akron, O.

Largest Manufacturers of Oil Filters and Exhaust Heads in the World.



Notice Sliding Sleeve Damper. Patented.



**READ THIS
GREAT FREE
BOOK OFFER
TO ROOFERS—
Contractors—Builders**

The Heppes Co., of Chicago, manufacturers of the famous Heppes No-Tar Roofing, announces that another big edition of its Roofers' Book and of its Instruction Sheet, have just come from the press. The American Carpenter and Builder is authorized to make this free offer:

To each and every reader who writes at once to the Heppes Company, they will send free, postage prepaid, a copy of the Roofers' Book and Diagrammed Instruction Sheet, one copy to each address.

We urge every reader to hasten to take advantage of this offer. The Heppes Roofers Book has already proved so popular with leading men in the building trades everywhere that the supply is subject to a heavy demand.

Write to-day. Address THE HEPPESS CO., 631 South 45th Ave., Chicago, and be sure to get both the Book and the Sheet.

The Heppes Roofers Book is a valuable aid to any man who has anything to do with roofing, no matter how much or how little experience he has. In addition to a complete catalog of Heppes No-Tar Roofing—which property owners are specifying in all parts of the country—it contains more roofing helps than any work of its size ever published. It explains the difference between Heppes No-Tar and "tar felt" and "building paper." It tells just what ply roofing to put on a store building and what ply to put on a shed. It shows the difference, in the cost of Heppes No-Tar and shingles. Why Heppes No-Tar, which costs only half as much as shingles will last three times as long. It tells why rain, snow, ice, heat or cold do not crack Heppes No-Tar or damage it in any way. It makes you thoroughly familiar with roofing values—so you can convince your customers—and make others want this durable roofing.

The Heppes Instruction Sheet

around steeples, chimneys, smoke stacks, etc. How to make a perfect flashing. How to cement laps to avoid leaks. How to lay a skin-tight, perfectly smooth roof. How to make gutters and valleys. How to finish eaves. How far apart to place special nails to have best wearing roof. How to cover old shingles. How to roof on sheathing, etc.

Remember, you get both the Book and the Instruction Sheet simply by sending your name and address to the Heppes Company.

HEPPES NO-TAR ROOFING

It is the roofing that will build up business and make money for you.

It is the roofing for farm and city homes—factories—stores—churches—steeples—barns—silos—out-buildings—poultry houses—for every job, the largest and smallest. There are hundreds of dollars in it for the wide awake man in every community. With the book and sheet we will send you our special contractors' samples. We will also put your name on our mailing list for all our literature. Get in touch with the best in the business. Let us help you. We are willing and anxious to co-operate with every man that comes to us for our advice and assistance. Write today.

THE HEPPESS CO., 631 S. 45th Ave., CHICAGO

The Best Paint and Varnish Remover

FREE TO YOU

JOHNSON'S Electric Solvo is not like any other paint and varnish remover. Perhaps you've tried other paint and varnish removers that were said to be the best.

Perhaps you've been led to believe that all high-grade paint and varnish removers are exactly the same.

It's true that they all sell for the same price—

But (a big but)

Johnson's Electric Solvo is different from all the rest because it won't—it can't injure the new finish and spoil your work.

We'll tell you why.

All the paint and varnish removers that are worth anything at all are made through license, under a certain patent.

The patent calls for a large percentage of paraffin and it is the quantity of pure paraffin used in other paint and varnish removers that prevents your new finish from drying properly.

Now in Johnson's Electric Solvo we use a special secret combination which contains only about one-fourth of the specified amount of paraffin.

As a consequence, Johnson's Electric Solvo gives the very best results in removing the old finish but does not leave an excess of paraffin to spoil the new finish.

Now you know why Johnson's Electric Solvo is the only safe paint and varnish remover for you to buy—and it costs no more than the unsafe kind.

Perhaps you've had an unfortunate experience with the new finish not drying properly after the use of a paint and varnish remover.

Now you can forget all that.

Tear out the coupon on the opposite page, fill it out and mail it to us now before you forget it.

We will send you, all prepaid at our expense, a sample of Johnson's Electric Solvo.

Address:—

S. C. Johnson & Son
Station ACB-4, Racine, Wis.
"The Wood Finishing Authorities"

FREE Wood Panels For You

WHEN you cut out the coupon on the opposite page, and send it to us, we will also send you a set of wood panels finished in various shades with Johnson's Artistic Wood Finishes if you can make good use of them and will so write on the coupon.

This set of wood panels will be mighty handy to show your customers so they can pick out just exactly what they want. And then you will give them just what they want, because you will find that Johnson's Wood Dyes will always match up exactly with the samples.

For all woods to be finished Natural and in Golden Oak, Dark Oak, Antwerp Oak and Green Antwerp Oak, we advise the use of Johnson's Paste Wood Filler and Johnson's Prepared Wax.

For all woods to be finished in all other shades, we recommend Johnson's Wood Dyes, and for filled-grained effect on open-grained woods, the use of Johnson's Paste Wood-Filler over the Dye, followed by Johnson's Prepared Wax.

The wood panels will show you the superiority of such finishes.



Finished Wood Panel Samples **FREE TO YOU**



CUT out the coupon below and send it to us for a sample of Johnson's Electric Solvo, our handsome 48-page book and if you can use them and request it, we will also send you a set of wood panels finished in various shades with Johnson's Artistic Wood Finishes—Johnson's Wood Dyes, Johnson's Paste Wood Filler and Johnson's Prepared Wax.

The book tells all about finishing, refinishing and polishing woods. It's full of practical ideas of great value to painters and wood finishers.

Johnson's Paste Wood Filler will never disappoint you or your customers.

Our special study of the wood finishing problem and our twenty-four years of experience as specialists in the handling of fine woodwork and wood finishes have proved that it is impossible to combine a filler with a finish as one preparation.

Anyway, most liquid fillers are simply very cheap grades of varnish which do not penetrate the wood at all—simply remain on the surface and show every scratch and heel print.

Some paste wood fillers are made of corn starch and like all vegetable products they decay in a short time—other fillers are made of whiting, talc, plaster of paris or other cheap stuff, and when dry they become loose and leave the wood worse than before—still others are made of cheap, round-grained silex, and do not properly penetrate the grain of the wood and so do not hold fast in it.

Johnson's Paste Wood Filler is made from the best and most expensive needle-like silex crystals, linseed oil and the best japan dryer—thus Johnson's Paste Wood Filler penetrates, and the crystals fit themselves perfectly to the grain of the wood and hold fast to it.

Johnson's Paste Wood Filler is prepared in six shades as follows: No. 10, Natural; No. 20, Golden Oak; No. 30, Dark Oak; No. 40, Antwerp Oak; No. 50, Green Antwerp Oak; No. 60, German Gray.

S. C. Johnson & Son
Station ACB-4, Racine, Wis.
"The Wood Finishing Authorities"

**Send This Coupon
To Us Now**

and we will send you the sample of Johnson's Electric Solvo, our handsome 48-page book, "The Proper Treatment for Floors, Woodwork and Furniture," and wood panels, if you ask for them.

FREE

**FREE
Coupon
ACB-4**
**S. C. Johnson
& Son
Racine, Wis.**

Please send me **Free** as per your offer one sample of Johnson's Electric Solvo and your illustrated book. My paint dealer's name is

His address is

My name is

City.

erection. Any practical mechanic who can work to a straight line can erect their metal ceilings. With each order they send a blue print showing the exact arrangement of each plate, by which aid it is impossible to go wrong in erecting one of Foster's ceilings. Every plate is stamped and re-stamped to bring out the fine details and outlines in the figure. After stamping the plates are re-sheared and are then dipped



in the dipping tank, where they are painted a coat of special blue ceiling primer on each side. The plates are all painted after stamping and not before, as is commonly done by most manufacturers. By this method an even coat is on every plate. They carry a large stock and are in a position to ship promptly.

The other illustration is of Foster's ornamental hip shingle, which, since it has been on the market, has rapidly taken the place of plain tin strips. This shingle is specially designed for covering the hips of roofs, either straight or curved, and is intended to take the place of plain tin strips, wood and metal ridge rolls. They can be adjusted to different widths and make a very ornamental finish. These can also be furnished in long lengths of several shingles in one piece up to five feet in length. For slate the standard size is 5 inches by 12 inches, and for wood the standard size is 4 inches by 9 inches. They are made of tin and galvanized iron and packed with two hundred and fifty in a box.



Wm. Foster & Sons Company also manufacture a full line of fireproof metal window frames and sash, galvanized iron brick and rock-faced siding, galvanized iron cornices, skylights, ventilators, zinc ornaments, radiator shields, and in fact anything in sheet metal building material. The firm invites the request of all contractors or builders for their ceiling catalogue No. 2, which will be mailed them pre-paid, free on request.

MORGAN

MAKES AND GUARANTEES
THESE PRODUCTS



The Materials named below are the development of ONE **BASIC VEHICLE**, but each is different in character and has a specific use of its own. Singly and collectively they form the

GREATEST DISCOVERY OF THIS ADVANCED AGE OF BUILDING, FOR WATERPROOFING, COATING, COLORING OR PLASTERING CONCRETE, CEMENT BLOCKS, AND BRICK wherever employed below or above the ground.

WE SUPPLY FREE SAMPLES

Analysis of a piece of the brick, stone, block or substance to be waterproofed, in requesting samples, give details on the above points

of any of these materials to any contractor, builder, owner or dealer. To do this we must know exactly what purpose the material is for and difficulties to be overcome. This often requires us to make a chemical analysis of the material, whether it is below or above ground, and if for application to exterior or interior.

COATINE

is a cement that is made of silicates and oxides, with the addition of **Our Vehicle**. It produces a cement that is waterproof and can be used for all concrete work, also on top of or below regular concrete. In either case it will make the concrete absolutely watertight at the bottom. Our COATINE can be used on brick walls, plaster walls, old cement walls and in fact, any place where you want to put a coating that will adhere to any and all kinds of surfaces, making them positively watertight. The adhesive and wearing qualities of our COATINE are beyond question. It will stand all scientific and service tests. It is made in non-fading colors.

MORGANITE

is a liquid form (not a paint). It is one of the greatest productions that has been put on the market of late, as it answers the present demand for something that will waterproof, thus preserving and protecting cement and brick buildings. One application of our MORGANITE on a brick or cement building will make it absolutely waterproof. It is made in non-fading colors and can absolutely be depended upon to both waterproof and color cement brick and cement blocks. Our MORGANITE prevents the cement, brick and mortar from crumbling, and a building coated with it will never peel, as there is no possible chance to do so, as the MORGANITE goes into the material, becoming a portion of it, locks up, and is unaffected by alkalis, gases etc. These results are produced by chemical action caused by the MORGANITE coming in contact with brick, cement or mortar.

MORGANWALL PLASTER

forms the waterproofing, two putty plaster coats, the hard finish coat, the sizing and if desired, the tinting needed for the walls or ceiling of any building. It combines all in one coat and completes the job at one operation. It makes a waterproof stainless wall. It saves 70% in labor and material over the usual method of plastering. It does away with the crude proposition of **only partially** waterproofing as is the case with all other forms of damp-proofing materials. **Morganwall Plaster** contains lime, silicates and oxides, together with **Our Vehicle** for thoroughly mixing. It prevents staining or discoloring and has greater adhesive qualities than cement or plaster.

WRITE NOW---TODAY

H. B. MORGAN & CO.,

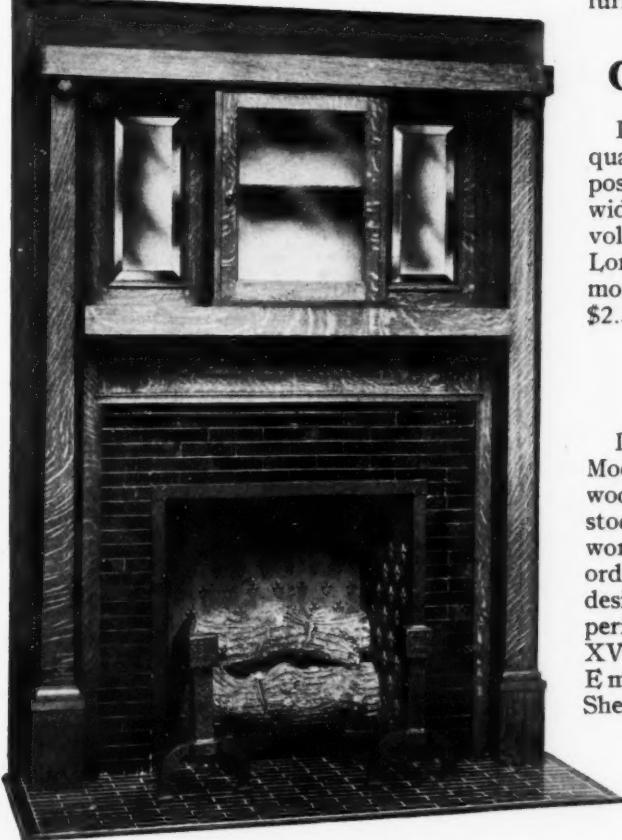
1107-1111 Seventy-Sixth St.
...CHICAGO...

LORENZEN MANTELS

\$2.50

to

\$250



A unique mantel of great merit that looks well in any finish 5 feet wide 9 feet 10 inches high. French beveled plate mirrors 8 x 18 inches. Clear beveled glass 14 x 18 inches in cup board.

YOUR HOME—Everybody's home should have a mantel. A mantel is useful as well as artistic and decorative. It saves you furnace heat on chill Spring and Autumn days, and diffuses cheer and comfort more than does any other piece of furniture in the house.

CHARACTER and QUALITY

Lorenzen Mantels have a distinct character and quality both in design and workmanship, not possessed by others. This has made for them world-wide reputation and enormous sales. The great volume of our output is what enables us to sell Lorenzen Mantels at such low prices. We have more than 100 designs and styles selling at from \$2.50 to \$250.00.

STYLES

Lorenzen Mantels embrace Colonial, Craftsman, Modern Mission and numerous other styles, and all woods and finishes. Our modern factory, large stock of air-seasoned lumber, and expert, skilled workmen all mean beautiful mantels, far above the ordinary. We are at all times prepared to furnish designs of mantels and fireplaces in the historic periods of architecture, such as Louis XIV, Louis XV, Louis XVI, Renaissance, Gothic, Rococo, Empire, Early English, Colonial, Chippendale, Sheraton, Adam, etc.

FREE CATALOGUE—The largest and finest catalogue of wood mantels ever issued, with photographic reproductions. Each copy costs us nearly a dollar to issue, but we send it **free** to all Carpenters and Builders. If you write for it now you won't forget.

CHAS. F. LORENZEN & CO., Inc.
299 N. ASHLAND AVE., CHICAGO

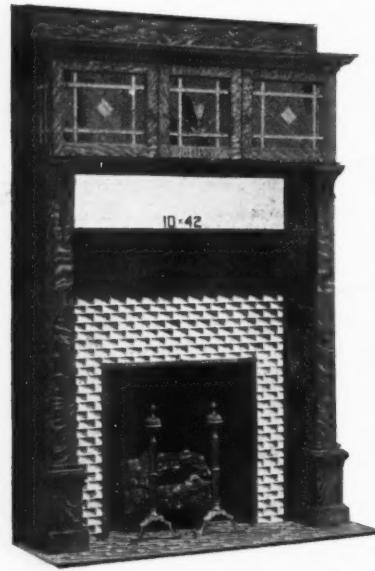
LORENZEN
PAYS THE
FREIGHT

Mantel and Fireplace Catalogues Free

The A. W. Burritt Company, known throughout the country as "The Mantel Folks," make announcement in another column to the effect that their 1908 catalogue is ready for distribution to all persons interested in mantels, tiles and fireplace furniture.

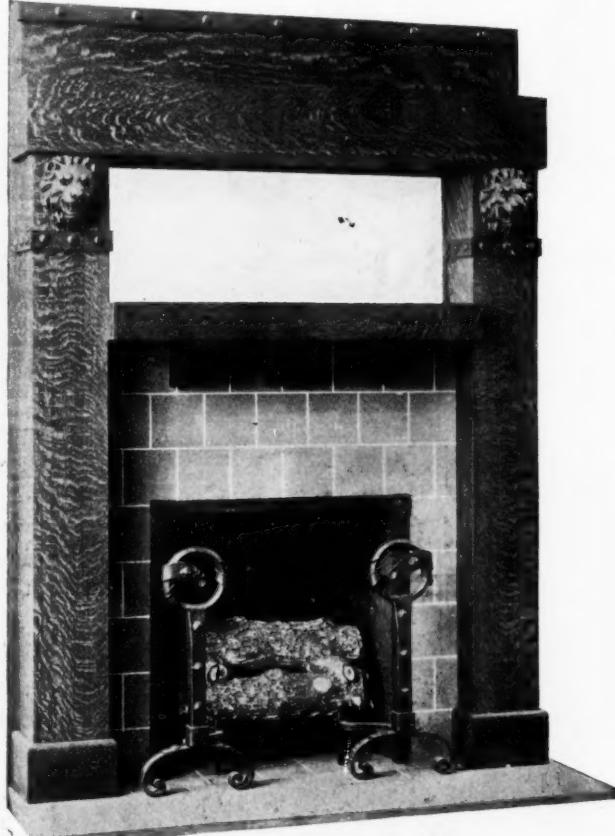
While this firm has been selling mantels for a period of only four years, it has met with splendid success and is now doing an extensive business throughout the country. By a generous, yet judicious use of "printer's ink" it's name is well and favorably known in every state of the union and its satisfied customers are legion.

Carpenters and builders who are constantly buying mantels for themselves or their patrons are rapidly learning that "Burritt Mantels" are dependable in every sense of the word and prove a constant source of satisfaction to both owner and builder. The A. W. Burritt Company pride themselves upon their past record of fair dealing, prompt shipments and the unvarying excellence of their goods and cordially invite everyone



interested to write for their Catalogues. The mantels shown

herewith give some idea of the variety of design, material and workmanship which characterizes "Burritt" Mantels.



The stock is perfectly seasoned and kiln-dried, carefully

WHITNEY PLANERS

If you want a Planer that will take the roughest, toughest, warped, uneven, twisted boards and turn them out with the smoothest of smooth surfaces, and

A Planer that will take, plane two or more boards of different thicknesses at the same time, and

A Planer that is staunch enough to stand anything short of actual abuse, and

A Planer that can be used for common box boards as well as fine cabinet work, and

A Planer that can be depended upon at all times, under any conditions,

Then Buy a

WHITNEY

Either Single
or
Double Surfacer

For Further Information Write

BAXTER D. WHITNEY & SON, Winchendon, Mass., U.S.A.



The Touch of Time Has Tested Vulcanite FOR SIXTY YEARS

Vulcanite is a natural **Mineral Rubber** which we control. It is mined the same as coal and costs us \$100 a ton. It is the best and most expensive material used to manufacture ready-to-lay-roofing. Vulcanite was first made in Europe sixty years ago. It is the most extensively used roofing in European countries today. Vulcanite was awarded the **highest honors** in America at the Philadelphia Exposition thirty years ago. It is not the cheapest roofing at first cost but **is cheapest** in the end.

In the process of manufacture **Vulcanite** is all subject to enormous pressure, consequently is made dense and very firm. Each square weighs considerably more than other roofings, and ply for ply is much thicker.

In the manufacture of **Vulcanite Roofing** all

the felt used is a pure all-wool felt—there is not a particle of paper or other cheap filler in it. The base of most cheap prepared roofings is a felt composed of a large percentage of waste paper added to the wool pulp. Our free booklet tells the entire process of manufacturing **Vulcanite**—write for it.

HEAT TEST



Lay a Piece of Vulcanite Roofing on a steam pipe or radiator for several hours. If the coating melts or evaporates—Don't Buy It.



Immerse It—in acid; if it is affected in any way—Don't Buy It.

ACID TEST

WATER-PROOF TEST



Soak It in water over night; if it absorbs moisture and gets soft and flimsy—Don't Buy It.

FIRE TEST



Lay a Live Coal on It; if it takes fire—Don't Buy It.

BOOKLET OF VALUABLE ROOF INFORMATION SENT FREE

FREE SAMPLES

Vulcanite will not freeze or crack in winter—will not crumble in dry weather—will absolutely refuse to leak in wet weather. If your dealer does not carry "**Vulcanite**," write us for samples and free booklet. See "**Vulcanite**" before you buy other roofings.

WRITE TODAY—SURE

PATENT VULCANITE ROOFING CO.

625 Campbell Ave.
CHICAGO



Put a Piece of it on ice, or expose it to zero temperature; if it becomes brittle, if you can break it like glass—Don't Buy It.

We are
Specialists in
our particular
Line of
Millwork
Product

OUR SHOP EQUIPMENT
IS SUCH THAT ECONOMY AND
QUALITY ARE PRESENT IN EVERY ARTICLE MADE

Embossed Mouldings

Our Specialty

SEND FOR OUR CATALOG No. 17

Here are a few items of our product on
which we will quote special prices for a short
time.

Send for our New Catalog No. 17. It shows
our complete line. It contains 96 pages, all
illustrated. Do it now—Write today.

Plate Rail 3 in., 4 in., 5 in.

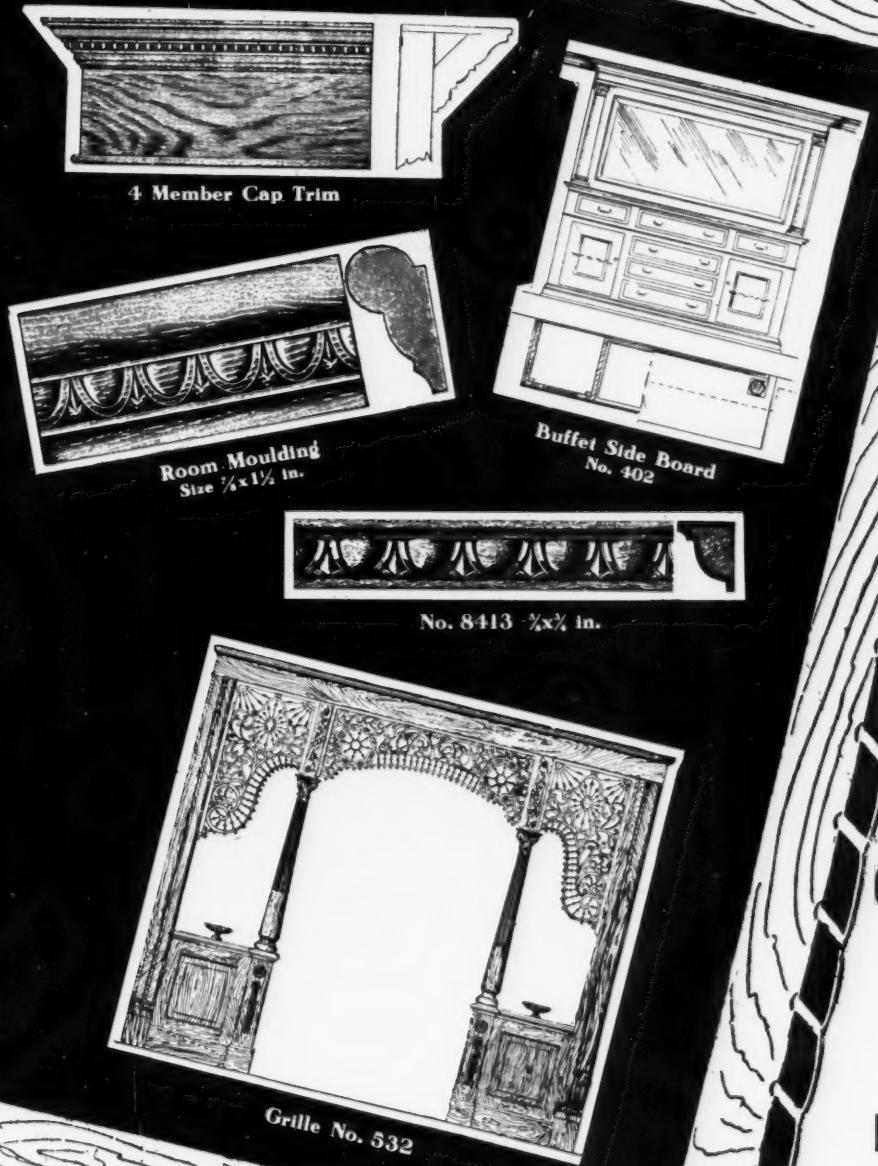
Gable Ornament
No. 20

Card Rail No. 5A 1 $\frac{1}{2}$ x 1 $\frac{1}{2}$ in.

Send for our New Catalog No. 17

CHICAGO EMBOSSED MOULDING CO.

Big Inducements to Consumers are always on Our Slate



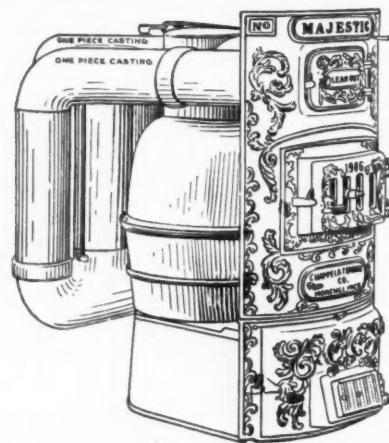
CAPS
GRILLES
COLUMNS
SPINDELS
BRACKETS
BALUSTERS
MANTELS
MOULDINGS
STAIR WORK
PORCH WORK
GABLE ORNAMENTS
ETC.

We Manufacture
Everything in the
Cabinet Line

583-587 Austin Ave.
CHICAGO

**VERY PROMPT
SHIPMENTS**

MAJESTIC ALL CAST IRON WARM AIR FURNACE



Manufactured in three styles, suitable for burning Hard or Soft Coal, Coke or Wood. Send us your plans. We will make heating plans and quote best wholesale price on complete outfit.

THE MAJESTIC COAL or WOOD CHUTE



A modern up-to-date convenience. The cost is so small that no residence, old or new, should be without one.

GOOD LIVE AGENTS WANTED

Write us for catalogue and our special proposition to contractors

Majestic Furnace & Foundry Co.
101 to 109 West St. Huntington, Ind.

selected for handsome grain effects and put together according to the most improved methods by thoroughly competent workmen. The finishing receives special care and attention and sufficient time is always allowed to produce the most pleasing and satisfactory results. "Burritt Mantels" may be had in the polished or dull rubbed finish, three coats flat white or any of the popular mission finishes.

While urging, so far as possible, the use of stock patterns and sizes, this concern is prepared to elaborate or modify any design shown in their catalogue and furnish same in larger or smaller size to meet special conditions at the job.

The fireplace goods handled by this company and shown in Catalogue "D" are of the same high standard of excellence as their mantels, and while handsome in appearance, are nevertheless built for real service. The variety of patterns in grates, portable baskets, fire sets, frames and summer pieces makes it an easy matter for anyone to select a suitable design to meet one's own fancy.

Tiles are an important feature of fire place decoration and when carefully selected greatly improve the appearance of the mantel. Tiles of every description for fireplaces are furnished by this company at attractive prices, as well as sanitary wall and floor tiles for bath rooms.

When writing for catalogues address Department M and mention the fact that you saw their advertisement in the AMERICAN CARPENTER AND BUILDER.

Genuine Bangor Slate

Slate roofs have stood the tests of time, wind and fire on all kinds of buildings. Slate is one of the oldest, yet most popular materials for roofing purposes. The very best slate roofing for structural purposes and blackboards comes from Bangor, Pa., which is the home of the East Bangor Consolidated Slate Co., which has an ad. in this issue. This company will be pleased to furnish valuable advice and information about slate in general and slate roofs in particular to all who write.

Specialties in Roofing and Sheathing Papers

To carpenters, builders and contractors who wish to buy building, roofing and insulating papers in any quantities, Messrs. C. B. Hewitt & Bros. are sending their latest price list and sample book. Stock of this company comprises fiber plaster board, deafening felt and all special papers used in construction work. Information concerning their line will be sent to any one writing for same and mentioning this paper.

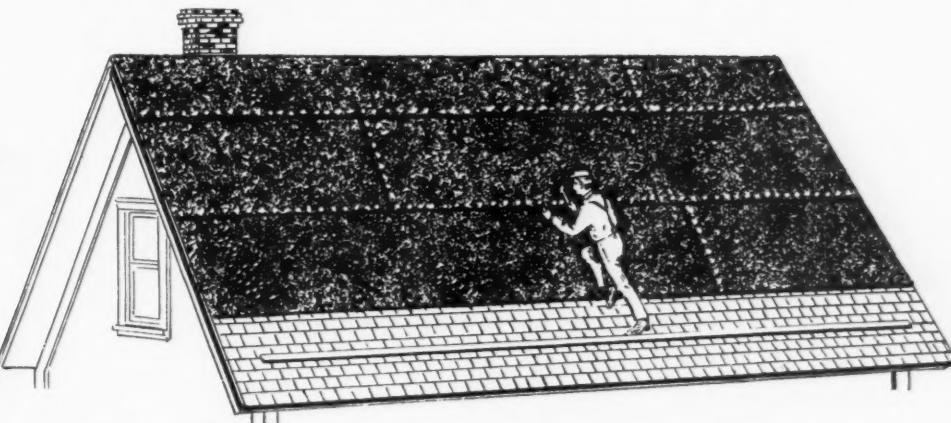
Specialties in Slate

To all contractors and builders interested in specialties in slate, the Pittsburgh Slate Company is sending its latest price list for this season. Works of this concern are situated right in the heart of the famous Bangor slate district, and everything in slate products is comprised in its line. Copy of this new list will be sent to anybody writing for same and mentioning this paper.

Clamp and Vise Economy

There is probably no problem that has to be solved and re-solved more frequently than that of clamping work in a modern wood-working shop. This is particularly true in a factory where quantities of work of various kinds, requiring gluing and clamping, are being turned out from day to day. While the average shop's supply of clamps to start with seems ample, the gluing operations come to an untimely end very soon after it begins, owing to their scarcity. This will be more readily appreciated by those experienced in the

What Is Your Test



For Good and Bad Ready Roofing?

There are some atrocious materials masked under the general term "ready roofing," manufactured from Petroleum sludge, refuse from soap factories, etc.

It costs no more to lay good roofing than poor roofing, and yet it saves you a large after-expense in maintainence, repairs, and damage caused by leaks.

Bad Roofing—when finished with soap-stone, looks well—but when exposed to the weather and atmospheric conditions, time soon demonstrates its inferior qualities.

Good Roofing—proves its value by durability on the roof under the stress of weather and atmospheric conditions.

We don't give mere verbal guarantees—but an individual written document to each purchaser

I know what materials are under the soap-stone finish in my **Compo-Rubber Roofing**. I manufacture the **Foundation Felts**, as well as the **Saturating** and **Coating** compounds. Therefore, I absolutely control the quality through every stage of its manufacture, and can safely guarantee the **Durability** of the fabric. And there is only one way to insure you on this point. We are the only Company that have adopted a method which does not necessitate your investigating any further than to ascertain whether or not every roll sold bears on the wrapper Woodley's certificate of quality, which lifts all risk from your shoulders and places it where we are willing to have it located—on our own.

An Individual Written Guarantee Furnished With Every Roll

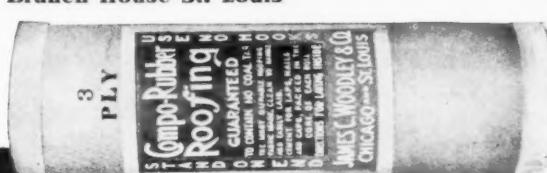
A mere verbal guarantee can be easily forgotten or dodged by a dealer, but we **Cannot Dodge** our responsibilities under our guarantee plan. In a nutshell, we claim to be the only Company furnishing with every roll that is made, **roof insurance that can't be questioned**.

Be sure our certificate of quality is pasted on every roll of roofing you purchase.

WOODLEY'S IS THE ONLY READY ROOFING WITH THE REAL GUARANTEE

If goods bearing this guarantee are not sold in your city, write us for samples and prices.

Jas. C. Woodley & Co.
2264 LUMBER ST., CHICAGO
Branch House St. Louis



making of table tops, desk tops, dresser tops, etc., where five to eight clamps are necessary on each top and should be allowed to remain on the work at least twenty-four hours before removing the pressure.

When we stop to think, the top of a desk is by no means a whole desk, but it has many other parts to be clamped during its construction. Further, that desks to be more economically manufactured, must not only be made in lots of hundreds, but thousands, and these operations to be done economically must so far as possible be continuous, we begin to realize one factor of the manufacturer's clamp problem.

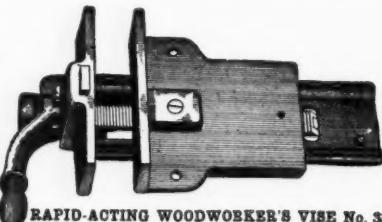
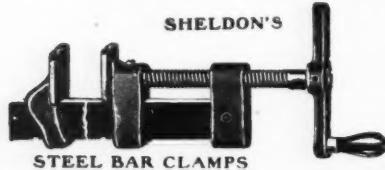
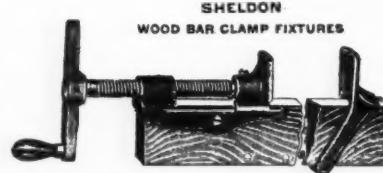
The next and equally as discouraging is the constant breakage, unless the clamps are prohibitively heavy or expensive.

The average gluer in his excitement and haste to get the pressure on his work before his glue chills, is a clamp wrecker.

The inventor of the Sheldon line of clamps and vises began his career in the machine shop, then into the wood shop, where he was confronted with the usual clamp problem. He was asked to get up a quantity of wood bar clamps with iron heads and screws for a piano manufacturer, that would not split and break loose from the bars under excessive pressure, that would not let the screw get out of line with the bars, that would provide against uneven or angular strains, bending the screw, that would provide against the head turning by the friction of the screw under excessive pressure thereby throwing the clamp out of position, or sliding off of the work at the critical moment. With the machinist's anxiety for strength, the woodworker's ambition for serviceableness, rapidity and economy, by much hard work, expense and experience, he solved the problem not only on the wood bar clamp, but steel bar clamps.

His Woodworkers' Rapid Acting Vises were developed in a similar manner, with the conviction that a woodworker's vise should not be built on the principles that would make a machinist's vise an utter failure so far as rigidity and positive action were concerned, that the slide and outer jaw must necessarily be of one solid piece of metal to accomplish this, that the pressure must be applied as near as possible to the resistance, that the wearing parts must be adjustable and either of steel forgings or malleable iron to stand the excessive strains that they are continuously subject to, that they must not cost from \$5.00 to \$10.00, when a woodworker can buy a vise screw for fifty cents and make himself a vise, which while inefficient and inconvenient, can be made to do.

The Sheldon Company ask no better proof of the correctness of these convictions than the records of their sales. The wood-working trade has appreciated their efforts, their guarantees, and their values, to the extent of 25,000 clamps, and 15,000 vises since their introduction. They are now installed in their new plant at 86 N. May street, Chicago, and have some literature on these subjects that will be interesting to any wood worker.



Composition Models for all Purposes

The illustration on this page shows a section of stucco work manufactured by the Acorn Modeling Works, of Indianapolis, Ind., which was placed in the banquet hall, Scottish Rites, Fort Scott, Kans. This concern makes a specialty of original designs for ornamental stucco work, for halls, lodges, theaters, churches and other buildings of like character. They also produce machinery for metal ceiling manufacturers, and original designs in dies in plaster and iron. One of their special features is the making of models of buildings for architects direct from their plans. These are



made out of a special composition, correctly to scale. From such models a good photographic perspective view can be obtained without difficulty. The composition from which these models are made, which is patented, is very strong and can be shipped by express without danger of breaking. Mr. Nowak, the proprietor, has personal charge of the modeling and building department, and has associated with him, Mr. Koffend, a graduated civil and mechanical engineer, who acts as constructor.

Every architect who gives their models a trial becomes a steady customer. Their works, which are located at 2238 Shelby street, Indianapolis, Ind., started on a small scale, but have been growing constantly.

The Floor of the Future

Wisdom directs and experience has taught that the floor of the future, be it in hall or in home, in factory or in palace, is to be of smooth and highly finished wood. There is a robust elegance about a hardwood floor which combines the delicacy of great natural beauty with the wearing qualities of iron. In points of economy and sanitation, the smooth-surfaced wood floor is virtually a necessity. It harbors no germs, and for sanitary reasons is recommended by the best physicians, scientists and architects. Until recent date the hardwood floor was considered an expensive luxury, principally because of the great amount of labor required to properly finish it, as well as of the additional labor required to keep its surface presentable where much in use. But



The Story of the Street Car

Side by side they sit; the one filling an important position in the world, enjoying a good income, and with every mark of prosperity—the other bent down with hard toil, working in a by-the-day job at poor wages. **Why is it so?** The answer is **training**.

Probably they started on an even footing 10 or 15 years ago but, the one man secured the training that enabled him to rise to the highest position in his chosen trade, the other either would not take the trouble to secure this training or did not realize the immense value of it.

If **you** are an untrained man and want to advance, write today to the International Correspondence Schools and learn how you can better your position, and how you can have your salary raised. You will be surprised when you learn what a practical plan this is—how you can secure in your own home, in your spare time, without leaving your present position the training that will qualify you for rapid and sure advancement. Last year I. C. S. training brought increased salaries amounting in one year to over two million dollars to the small percentage of I. C. S. trained men that **voluntarily** reported their advancement. If you want **your** position bettered and **your** salary raised, mark and mail this coupon. It puts you under no obligation to do this much, so **do it NOW**.

International Correspondence Schools Box 910, SCRANTON, PA.

Please explain, without further obligation on my part, how I can qualify for a larger salary and advancement to the position before which I have marked **X**.

• Architect
• Architectural Draftsman
• Contractor and Builder
• Building Inspector
• Structural Engineer
• Structural Draftsman
• Supt. of Plumbing
• Foreman Steam Fitter
• Plumbing Inspector
• Heating & Ventil'g Eng.
• Bridge Engineer

• Civil Engineer
• Mechanical Engineer
• Mechanical Draftsman
• Electrical Engineer
• Elec. Power Station Supt.
• Foreman Machinist
• Sheet-Metal Pat. Drafts'm
• Mining Engineer
• Railroad Construct'n Eng.
• Bookkeeper
• Ad Writer
• Civil Service Exams.

• Name _____

• St. and No. _____

• City _____ State _____

today this is all changed. Manufacturers of the various forms of flooring have succeeded in improving their product to such an extent that its practicability has been greatly increased and cost reduced, and all that remained was for perfect machinery to be invented that would take the place of the old, tedious, expensive and uneven method of hand scraping in finishing and refinishing wood floors. Through the invention of the Schlueter Rapid Floor Surfacer, this has been accomplished in a way that has overcome every difficulty as to method and means and left nothing to be desired in point of cost or effectiveness. With a Schlueter a wood floor of any kind in any building, from an Auditorium or great

Exposition building containing thousands of square feet in one unbroken surface, to the smallest room in the humblest home, can be made and kept the acme of perfection in smooth-surfaced finish, appearance and cleanliness. The Schlueter Rapid Floor Surfacer is so constructed that a roller, to which a sheet of sandpaper is quickly adjusted, is brought in contact with the floor surface while revolving at a speed of 600 revolutions a minute. It is guaranteed to do the work cheaper and smoother than any other machine or method. This machine is guaranteed to be the best machine adapted to produce an even, smooth surface on any kind of old or new wood floor, hard or soft, and in all buildings, from residence and stores, to factories, bowling alleys, roller skating rinks, reception and dance halls, etc. It will remove all joints or warped edges, and leave the floor perfectly smooth. It will remove shellac, varnish, oil, wax, lime stains or the "muck" from skate wheels in a most satisfactory manner. In another place in this issue will be found an advertisement illustrating this machine. A fine illustrated booklet on floor surfacing will be sent free to all who write M. L. Schlueter, 61 South Canal street, Chicago, and mention the AMERICAN CARPENTER AND BUILDER.

Woodley's Real Roofing Guarantee

The manufacturer of any kind of product and the dealer selling the product can easily say, "We guarantee it," but in the matter of ready roofing a mere verbal guarantee is not worth much, because time is the true test of the qualities of a roofing, and unless the purchaser has documentary evidence of an actual guarantee, direct from the manufacturer, which means something, and can be presented years after the roofing is laid, he really has no guarantee at all.

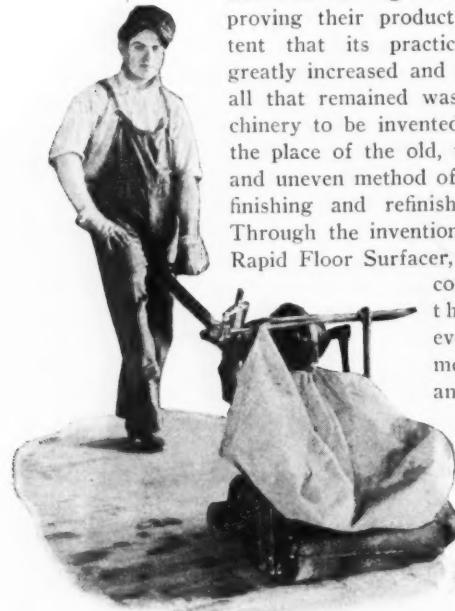
James C. Woodley & Co., the manufacturers of the celebrated product known as "Woodley's

Compo-Rubber Roofing," are the first and only house to protect the contractor, dealer, consumer and themselves by issuing to the purchaser a written guarantee in an official and legal documentary form that absolutely protects all concerned, and

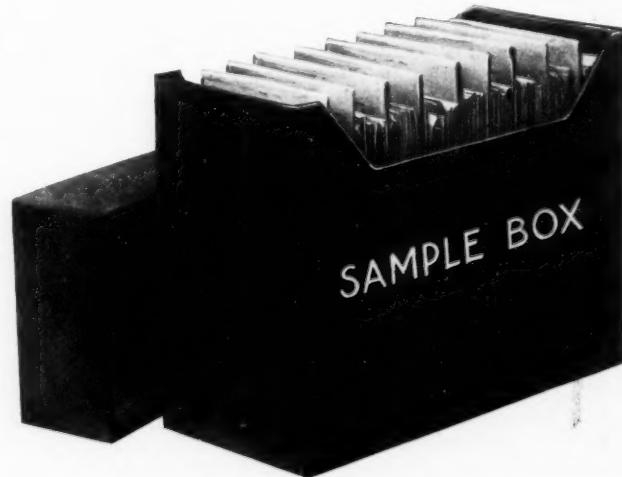
their selling method is such that no consumer or contractor need be imposed upon by having some other brand of roofing substituted for Woodley's Compo-Rubber.

On this page is shown an illustration in fac-simile of the form of Woodley's guarantee, that goes to each purchaser with every roll of their roofing and can be obtained from any dealer selling their brand.

The new mill of James C. Woodley & Co. manufactures ten carloads of



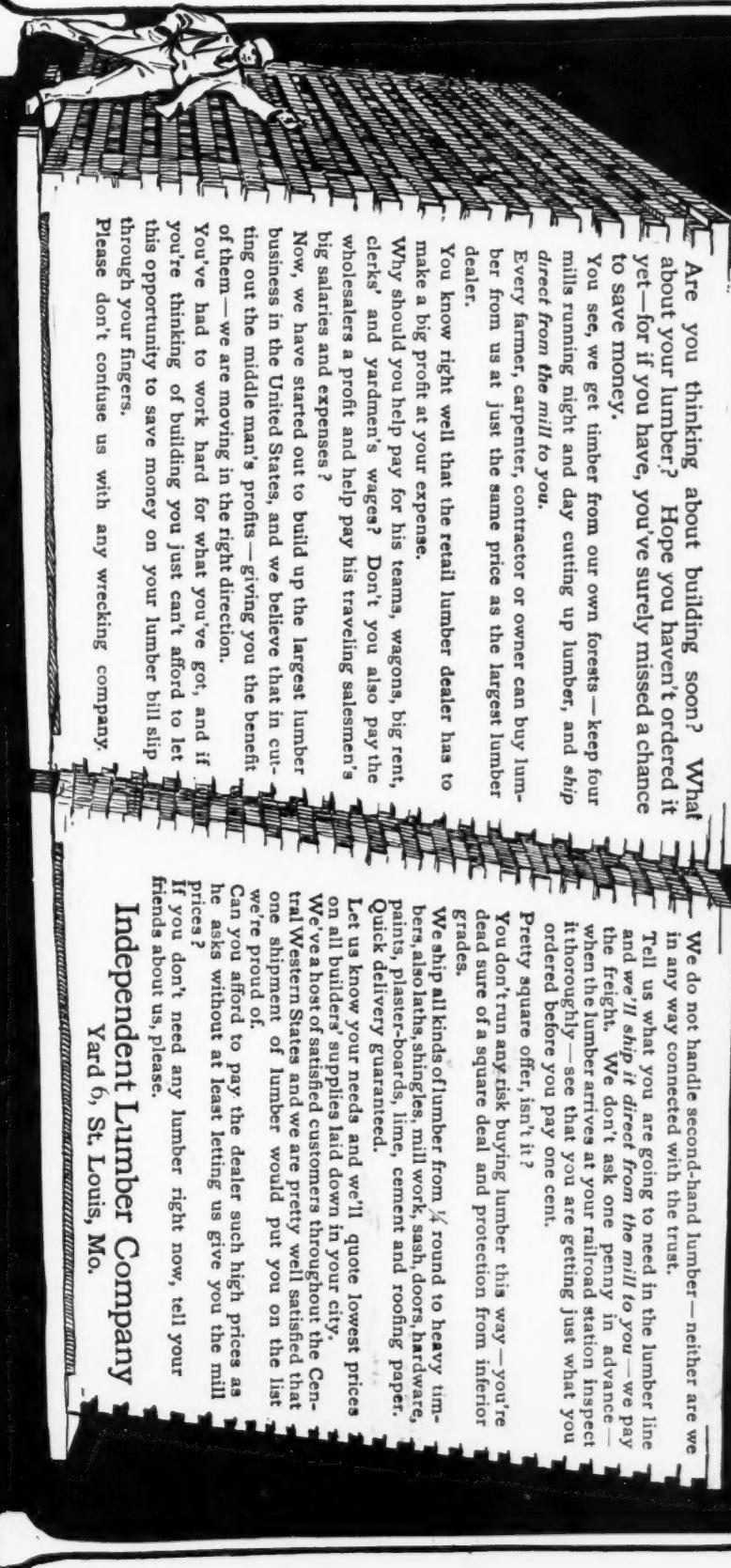
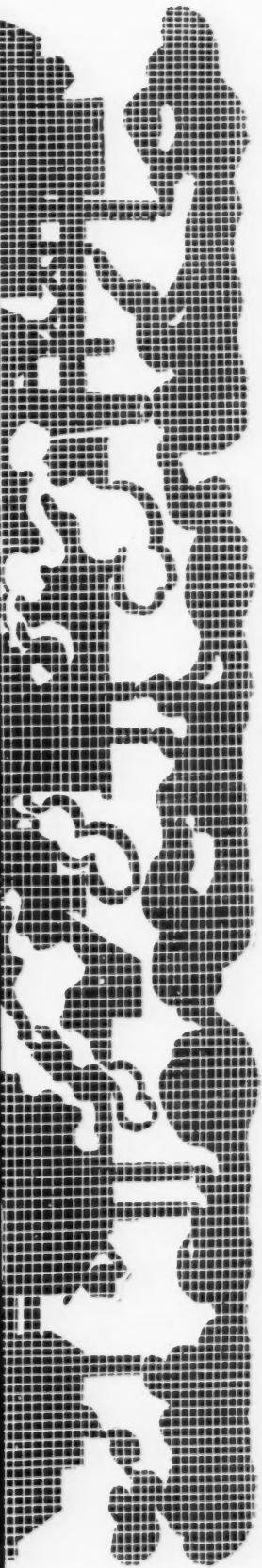
Woodley's roofing and building papers, deadening and asphalted felts every twenty-four hours, and for the convenience of contractors in figuring and estimating, James C. Woodley & Co. are furnishing to contractors, builders and architects a neat sample box with indexed divisions, in which are placed card folders containing samples of each of the Woodley products, showing each weight and kind separately. In a mo-



ment's time the architect or contractor can find and examine what he is looking for. An illustration of the box and outfit

LUMBER Direct from the Mill

Save \$60 to \$100 on each Carload



Are you thinking about building soon? What about your lumber? Hope you haven't ordered it yet—for if you have, you've surely missed a chance to save money.

You see, we get timber from our own forests—keep four mills running night and day cutting up lumber, and ship direct from the mill to you.

Every farmer, carpenter, contractor or owner can buy lumber from us at just the same price as the largest lumber dealer.

You know right well that the retail lumber dealer has to make a big profit at your expense.

Why should you help pay for his teams, wagons, big rent, clerks' and yardmen's wages? Don't you also pay the wholesalers a profit and help pay his traveling salesmen's big salaries and expenses?

Now, we have started out to build up the largest lumber business in the United States, and we believe that in cutting out the middle man's profits—giving you the benefit of them—we are moving in the right direction.

You've had to work hard for what you've got, and if you're thinking of building you just can't afford to let this opportunity to save money on your lumber bill slip through your fingers.

Please don't confuse us with any wrecking company.

We do not handle second-hand lumber—neither are we in any way connected with the trust.

Tell us what you are going to need in the lumber line and we'll ship it direct from the mill to you—we pay the freight. We don't ask one penny in advance—when the lumber arrives at your railroad station inspect it thoroughly—see that you are getting just what you ordered before you pay one cent.

Pretty square offer, isn't it?

You don't run any risk buying lumber this way—you're dead sure of a square deal and protection from inferior grades.

We ship all kinds of lumber from $\frac{1}{4}$ round to heavy timbers, also laths, shingles, mill work, sash, doors, hardware, paints, plaster-boards, lime, cement and roofing paper. Quick delivery guaranteed.

Let us know your needs and we'll quote lowest prices on all builders' supplies laid down in your city.

We've a host of satisfied customers throughout the Central Western States and we are pretty well satisfied that one shipment of lumber would put you on the list we're proud of.

Can you afford to pay the dealer such high prices as he asks without at least letting us give you the mill prices?

If you don't need any lumber right now, tell your friends about us, please.

Independent Lumber Company

Yard 6, St. Louis, Mo.

is shown on page 104. It is sent to anyone upon receipt of 25 cents to cover postage. This box contains neat samples of the following building materials:

Woodley's Compo-Rubber Roofing.
Woodley's Flint-Covered Roofing.
Woodley's Ready Gravel Roofing.
Woodley's Asphalted Felts.
Woodley's Tarred Felts.
Woodley's Threaded Felts.
Woodley's Slaters' Felts, etc.
Building Papers.
Deafening Felts.
Linofelt Sound Deafener.
Lath Insulator.
Compo Board.
Blue Plaster Board, etc.
Carpet Linings.
Dry Roofing Felts.
Asphalt Roof Coating.
Structural and Metal Paints, etc.

This sample box should be in every contractor's and architect's office. The illustration shown at the beginning of this article is of a roll of Woodley's Linofelt Sound Deafener. This material is made from degummed Flax Fiber, sewed between two thicknesses of three-ply building paper and is a sound deafener of great efficiency. The flax fiber is degummed by a special patented process, rendering it clean and odorless. It will not decay as hair felt does, and is rat and vermin proof. Put up in rolls 36 in. wide, containing 120 square feet. For more information see the full page display ad. or write James C. Woodley & Co., 22nd and Lumber, Chicago, Ill.

The New Ideal

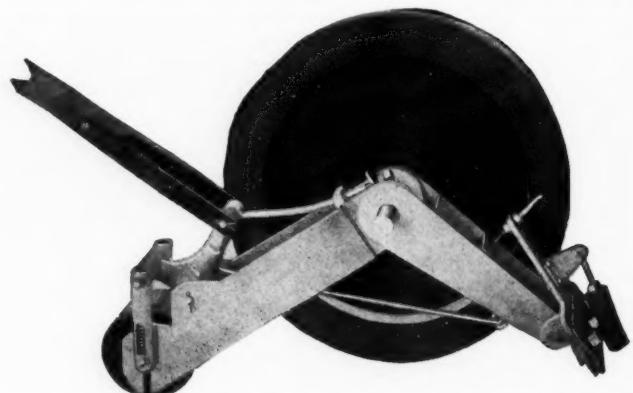
The inventive mind of man has devised many and various methods for lightening labor. Nowadays things must be accomplished quickly, and machinery is, and always has been, quicker and better than hand work.

There are many floor scraping devices on the market at the present time, some good and others not so good, but as a rule they are great labor savers. Most of the machines now on the market resemble each other greatly, but the New Ideal Floor Scraper is totally different from the others in almost every respect. In the first place it is strictly automatic in its movements, and it is essentially not a "pivot" machine.

By referring to the below cuts the differences between this and other machines is plainly manifest. It is made with all the latest devices for fast and accurate work, and it will positively surface and finish the floor, leaving the floor absolutely level. It is, as was said before, automatic in its action, with automatic levers that operate the knife. The handle is not raised while scraping, as is customary in most other machines, and the angle of the knife can be adjusted so that it will cut either deep or shallow for different kinds of wood. It is claimed that this machine will work where others have signal-ly failed, and that more work and better work can be done with it than on others. Strength and simplicity are its chief characteristics. The entire weight of the machine is practically in its wheels, which are at all times bearing directly on the floor, and by an adjusting rod on top of the frame, this weight may be either increased or diminished as desired.

The knife arrangement in the New Ideal stands alone of its kind, and its superiority can be seen at a glance. The

front section of the frame which is hinged at the axle and to which the knife is attached can be swung upwards instantly to sharpen or buff the knife, which saves the opera-



tion quite a little time and annoyance. Placed in front of the knife is a protector which is also automatic in its action, and it not only protects the woodwork from the machine, but also prevents the knife from leaving any mark whatsoever on the floor.

Spring cushions attached to the rockshaft and operating on the roller at the rear of the frame, keeps a uniform pressure of the knife on the floor at all times while cutting.

This machine was invented by Mr. Samuel Drew, 191 Genesee street, Rochester, New York, and from letters shown to a representative of this paper, all the claims made for it are fully substantiated. It is a good machine. Write him, mentioning this paper, for further information.

Latest Improved Swing Cut-off Saw

One of the latest inventions upon the market is the new improved swing cut-off saw now being manufactured by the Lovell Machine Works, of Gardner, Mass. It is adapted for use in shops of any description, it being made in any required size to carry from 14 inch to 54 inch saws, according to the size of work desired. The cut here shows a regular 16 inch machine, and particular attention is called to the adjustable hanger which is so constructed that the box which carries the weight of the swing frame relieves all friction from the countershaft, and may be adjusted six inches up or down, in aligning the saw. This adjustment allows for the taking up of all the wear in the saw, which is not only a great saving, but it also gets all possible wear out of a saw.



The frame swings on a turned sleeve, outside of the box and the countershaft and inside of the sleeve, making a perfect swing, free from all friction caused by the weight of the frame.

For a more complete description of this machine and for information relative to the extensive line manufactured by this company, a card addressed to the Lovell Machine Works, Gardner, Mass., will bring a complete, handsomely illustrated catalogue.

OUR
GRAND 1908
OFFER

NEW LUMBER

FIFTY MILLION FEET
AT REDUCED
PRICES

Bought at Forced Sales from Manufacturers. It makes
us Headquarters for Thousands of Genuine Bargains
in Lumber and Building Supplies. We save you money.

BIG
SPECIAL
SALE

Save 30 to 60 Per Cent. Buy Direct. Building Supplies of Every Kind.

Balustrades. Hardware. Roofing.
Barn Sash. Heating. Scantling.
Bath Room Apparatus. Sheathing.
Outfits. Hot Bed Sash. Shingles.
Beams. Imitation Siding.
Boards, all Brick Siding. Stair Work.
Sizes. Joists. Storm Windows.
Building Paper. Lathing. Studding.
Casing. Mantels and Timber.
Ceiling. Fire Places. Water Supply Outfits.
Cement. Moulding. Nails.
Flooring. Paint. Window Frames.
Gable Orna- Pipe.
ments. Glass. Plumbing Window Sash.
Green House Material. Wire.
Material. Porch Work.

The Chicago House Wrecking Co.
Purchased at forced sales, 50,000,
000 feet of new lumber. We are
making special concessions to those who

buy at once. Our prices today are far lower than prices have been for years. Order now for immediate or future use. Quick action will save you big profits. Remember prices elsewhere which are even now high, are bound to rise. We can quote you 30 to 60 per cent better prices for the same lumber than your local dealer. We guarantee every carload to be exactly as represented. Closest inspection of our lumber stock invited.

Call at our warehouse and yards at Chicago and see the lumber we are offering and you will recognize that it is all we say of it. Make your own selection and see it loaded. It is not necessary to come to Chicago, however, unless you wish to. **We can fill your order by mail** with just what you want and guarantee you absolute satisfaction. Ours is the largest direct to the consumer lumber headquarters in the world. We sell millions of feet annually. Orders filled from

every part of the United States. No matter where you live you can save money by supplying your building wants here.

We do not figure fancy prices, but quote figures that command your patronage. Whether your order is large or small we can save you money on it. Our tremendous business of millions of dollars annually is your best guarantee of complete satisfaction of every purchase made from us. In our enormous stock of new lumber of every kind we have just what you need for every purpose. Don't buy a stick of material until you get our prices. We offer you everything in the lumber and building supply line needed for residences, farm homes, stores, churches, barns, outbuildings of every kind, sidewalks and fencing. In short any kind of a structure requiring lumber, at from 30 to 60 per cent less than your local dealers or lumber yards ask for it.

IMPORTANT! Send Us Your Lumber Bill For Our Estimate.

Make up a list of what you need. Send it to us for our price. If you are putting up a building of any kind whatsoever let us figure with you. **Our prices talk louder than words.** Have your carpenter or contractor send us your list of what is needed if he has charge of your building. Don't pay exorbitant prices to the lumber trust with their long line of lumber yards all over the country. Don't let the local dealer soak you with his heavy profit. Remember: Chicago House Wrecking Company buys millions of feet at a time under circumstances of forced sales which mean sacrificed prices and enables us to sell even as low as cost without loss. You take no

chances in dealing with the Chicago House Wrecking Company. Whether for \$1 or \$10,000 your order will be filled carefully. Our lumber and supplies are guaranteed exactly as represented. If you have no need for a whole carload yourself, get your neighbors to club in with you. By buying a carload you can save all kinds of money on freight charges. We have railroad trains running through our main warehouses and buildings and can load a car to good advantage to you. You can include in this same car, pipe, plumbing material, roofing, wire, fencing, furniture, hardware and merchandise of every kind.

We also furnish you building and barn

plans absolutely free upon request. Write us for any information or advice you want and we will have our staff of architects answer every inquiry promptly. Our free book of plans is sent if you mention this paper. We simplify your building proposition.

Our business demands quick action. We must keep our stocks moving. This means prompt shipment—no annoying delays. Let us help you lay out your plans. We will relieve you of every detail. That is what our Special Builder Service is for. Be sure and send us your lumber bill for our estimate. Feel free to write for anything you want to know along the line of building and supplies.

WE PURCHASE OUR GOODS AT Sheriffs' and Receivers' Sales

Rubberized-Galvo Roofing, \$1.25 per sq.

**RUBBERIZED
GALVO
ROOFING**
The greatest Roofing value on earth. No higher grade manufactured. Unexcelled as to quality, wear and economy. Easy to put on. Requires no previous experience. Can be put on over shingles without removing them. Does not require a coating after it is on the roof. Weather-proof and price. Contains no coal tar, resinous or injurious compositions. This roofing is bought direct from manufacturers and is usually sold at double our prices. We furnish with each order, sufficient cement to make the laps and large head nails to put it on with. It is appropriate for any kind of a building. **1 p/sq. ft., \$1.25
2 p/sq. ft., \$1.40. 3 p/sq. ft., \$1.75.** These prices are per sq. ft. of 108 sq. ft. and are F. O. B. Cars, Chicago. Also have in stock 3000 sqs of pure asphalt rock surfaced Roofing, bought by us at Manufacturers' sale. Price per 108 sq. ft., including nails and caps, **\$1.50.** Red, rosin-sized Building Paper, 500 sq. ft., **45c.** Slates Roofing Felt, 500 sq. ft., **75c.**



DOORS 40c WINDOWS 20c

1,000 good doors, various sizes, secured by us in connection with dismantling operations, most of them with hardware. Prices range from 40c up. Fancy front doors, all designs, **\$1.50** up. 9,000 window sash, 20c up, all sizes. Complete line of everything in mill work. All brand new, best quality. Barn sash, 6 sizes, 25c up. Cellar sash, **75c** up. Clear yellow pine moldings, 25c per 100 ft. and up. Porch, **1.50** up. Columns 54c up. Stairnewels, **\$1.75.** Stair rail, **10c** per ft. Plaster castings, 0.5c to 3-4c a ft. Barn blocks, 4c each. Quarter-round, 20c per 100 ft. Hardware thresholds, 4c. Porch brackets, 2c. Porch spindles, 4c. We handle everything in the Building Supply Line, including light and heavy hardware. Send us your lumber bill for our estimate. Ask for our new special mill work catalog. It prices everything needed for building purposes. Sent free.

Bath Tubs, \$6

300 "New Style" bath tubs, finest galvanized steel finished inside with special white japanned enamel. Nicely finished outside. Heavy wood rim. Length 5 ft. While they last, **50c** for 5-1/2 ft. **\$8.40.** Handsome porcelain tubs with 3-in. roll rim. Seamless. White enameled on inside, finest nickel-plated fittings. Each **\$14.00.** Full line of other tubs up to **\$25.00.**



Bath Room Outfits, \$25. With steel enameled closet bowl, polished hardwood seat and tank, handsome enameled lavatory, all nickel trimmings, complete, ready to install, **\$25.** Other combinations **\$37.50, \$50, \$64, to \$150.**

Plumbing Material all Kinds not represent original cost of production. We buy at Sheriff's and Receiver's Sales only. Cast Iron Enamelled Sinks, up from **\$1.25.** 1-piece enameled iron sinks, back and nickel plated faucets, **\$1.15.**

FREE! Building and Barn Plans—Architect's Advice FREE!

"A Good Advertisement for Us"

Ainsworth, Ind.—I received my carload of lumber from you and it was O. K. in every respect. It will advertise itself in my locality and I am sure it will bring you several orders from here.

—WM. RASCHKA.

"More Coming"

Nevada, Mo.—Will say I am very much pleased with material, especially the dimensions. Have had several contractors to see the lumber and they were well pleased with it. Will order 8 or 10 cars in the spring.

—J. FOWLER.

"Another Satisfied Man"

Brighton, Ill.—Hope we can deal together again for I am pleased to know that you are an honest Company and do what is right. If I need any more lumber will be sure to deal with you.

—ALEX CAIRNS.

Advice FREE!

"Everything Satisfactory"

Paw Paw, Ill.—Carload lumber arrived. Everything satisfactory. Our lumber merchants inspected the lumber and admitted for the purpose we wanted, it was a very good bargain. We had 10 big loads. Very glad we sent our order to you as we got better value for our money than expected.

—MRS. C. JONES.

Hundreds of Big Money Saving Bargains for Every Builder. Don't Build Your House, Barn, Store, Corn Cribs, Church, Etc., without getting Our Big Lumber Offer. Lowest Prices on Millwork Supplies, Roofing, Water Supply Outfits, Paints, Plumbing Supplies, Hardware, Heating Outfits, Furniture, Carpets, Linoleum, Etc.

Our Big 1908 Steel Roofing Offer. 100 Sq. Ft. \$1.50.

Most economical and durable roof covering known. Easy to lay, requires no tools but a hatchet or a hammer. Will last many years with ordinary care. Ideal for houses, barns, stores, churches and outbuildings. Also used for ceiling and siding. Cheaper and lasts longer than shingles. **Lighning Wire and Fire-Protection** is standard. Elements best of all. Makes your building cooler in summer and warmer in winter. Will not take rain or water. We have 15 quarters for roofing. Our prices defy competition. Read our offer. Absolutely perfect, broad new, No. 15 grade, semi-hardened Steel Roofing and siding, per 100 square feet **\$1.50.** Each sheet 24 in. wide and 24 in. long. **\$1.75.** For 25 cents per square additional we furnish sheets 6 and 8 ft. long. Steel Pressed Brick Siding, per sq. ft., **\$2.00.** Fine Steel Beaded Ceiling, per sq. ft., **\$2.00.** Can furnish standing Seam or "V" crimped.

We Pay the Freight to all points East of Colorado, except Okla., Tex. and Ind. Ter. Quotations to other points on application. This freight prepaid only refers to the Steel Roofing offered in this advertisement. Satisfaction guaranteed or money refunded. We will send this roofing to anyone answering this advertisement C. O. D. with privilege of examination if you send 25 per cent of the amount you order in cash: balance to be paid after material reaches your station. If not found as represented, refuse shipment and we will refund your deposit.

OUR NEW 500-PAGE CATALOG NO. 742 FREE.

This Wonderful Bargain Book is just out and ready to be sent to you at once. It is a book such as every shrewd buyer must have. 500 Pages with thousands of items of the very best merchandise and supplies bought at Sheriff's and Receiver's Sales. It will pay you to keep it handy. Its pages contain a full record of what we still have on hand from the wonderful St. Louis World's Fair. Merchandise, Machinery and Supplies, articles for every one. You will find it useful in the home, in the workshop or in the office. Write today. Cut out coupon in corner. Fill in answers to questions. Sign your name and address in full and mail to us. We will send you our Catalog free upon receipt of coupon and answers to questions.

CHICAGO HOUSE WRECKING COMPANY, 35th and Iron Streets, CHICAGO, ILL.

FREE CATALOG COUPON

Fill out, cut out, and Mail to Us.

When do you expect to build or improve?

What kind of building or buildings?

What items in this advertisement interest you the most?

Name _____

Town _____ County _____

R. F. D. or P. O. Box _____ State _____

I saw this advertisement in the American Carpenter & Builder. Send me free of all cost your 500-page Catalog. Address

Chicago House Wrecking Co., Chicago

Roofing Slate Now Superseding Shingles

In the March number (page 733) an interesting and comprehensive article appears relative to roofing slate. Among the other facts stated, it is set forth that roofing slate is among the very oldest forms of roofing known, having been in use for over 600 years in Europe.

Owing to the almost total exhaustion of timber and the fact that the shingles and timber imported from Finland and other remote points is excessively high through the heavy cost of importation, slate is practically the only roofing material available and in use in England, Germany and France.

Conditions in the United States are fast approaching those of Europe. The enormous and wasteful consumption of timber, devastating forest fires and the inroads of the wood pulp mills are rapidly depleting our timber supply. The best quality of shingles are now prohibitively high and will soon be entirely out of the market. The cheaper grades made from soft wood are of a very inferior and unsatisfactory nature. The result is that roofing slate, on account of its extreme durability and reasonableness of cost, is now coming into general use in all localities. Within a short time, every permanent building of value will have a roof of slate. It is therefore self evident there is practically unlimited amount of work available for carpenters, builders and others who are in a position to handle slate roofing.

As to a good slate roof being the cheapest and best in the long run for the property owner, there can be no question, and slate roofing should yield steady, substantial profits in any neighborhood. It is a business that can be carried on advantageously either as an exclusive business or in conjunction with other lines, and is one that does not require a large amount of technical knowledge or previous experience or a heavy outlay for tools. For some unknown reason, it is a

prevailing opinion of people not familiar with the use of slate that a building must be constructed very much stronger for slate than for other roofing material. This is a great mistake, as any building strong enough for shingles, tin or iron is strong enough for slate, for the following reasons: The weak points of any roof are the valleys, or other breaks in the roof where snow drifts in and lodges, and when the snow melts with rain the weight at points where the snow has drifted is much heavier than any two slate roofs. It is well known that snow will not stick on a slate roof as it will on shingles or on a metal roof, as the slate, being of a warmer nature, causes the snow to melt and slide off; while with shingles or metal it freezes on, causing greater weight than a slate roof is ever called on to bear. Two by six rafters, eighteen feet long, two feet from centers, gives a roof all the strength necessary for a slate roof. The writer has seen hundreds of houses roofed with slate where the rafters were two by four, two feet from centers, sixteen feet long, with collar beam nailed across one-third of the way down from the top.

Slate can be depended upon to make a roof perfectly water tight on any pitch down to one-fifth. Half pitch or steeper makes the best roof, both for looks and strength, as it throws the weight on the walls more than on the rafters, and causes the snow to slide off clean, thereby never overloading any one part of the roof. From the facts given above, it will be noted that practically any kind of a building, new or old, is suited for a slate roof. Considering the possibilities of the slate roofing business in the way of a large volume of work and good profits, it would certainly pay our readers to write at once to the American Sea Green Slate Company, Box 36, Granville, N. Y., for full particulars and their free book of instructions.

TAKE UP SLATE ROOFING



Carpenters and Builders: Take up slate roofing in **unoccupied territory** everywhere. It's a **money-maker**. Only a few simple, inexpensive tools and small capital necessary. Slating is easy to learn. Very much like laying shingles. Can be carried on in connection with your present line with no extra trouble or expense and will give good returns. A profitable, growing slate roofing business can be established **anywhere**. Besides the new work that comes up every year, there are simply hundreds of worn-out shingle, metal, tin and composition roofs in every locality that **must** soon be replaced.

Sea Green or Purple Slate Roofs

[Outlast Any Building]

They **can't** wear out, rust, warp or decay. Are fire and spark proof. Reduce insurance rates. Afford clean cistern water. Don't require constant repairs and attention. Your neighbors are tired of paying good money for short lived roofing—high priced shingles that soon decay—tin and metal roofs that cause frequent and costly paint bills—composition and the "oids" roofing that disintegrate. Furnish

them with handsome, sanitary, fire-proof **Never-Wear-Out Sea Green or Purple Slate Roofs** that last **forever**. **Carpenters and Builders:** Take up slate roofing this Spring. You will make good money and please your customers. Write to us at once for delivered prices on slate, tools and supplies and **Free** book of instructions. **Don't Delay. Write To-day.**

AMERICAN SEA GREEN SLATE CO.,

This proposition does not apply to territory now covered by a slate roofer.

Box 36, Granville, N. Y.

Sea Green and Purple ROOFING SLATE

SEND FOR OUR CATALOG. "HOME HEATING"

HOT-WATER HEATED \$198 EACH

by ANDREWS SYSTEM



14 ANDREWS HEATERS IN ONE BLOCK

AVERAGE PRICE. \$198.00

IT IS WELL WORTH READING

1908 CATALOG Of Hot Water and Steam Heating

Our new catalog explains fully the principles and advantages of hot water heating, based on 18 years' experience in the cold Northwest, and describes how any carpenter or mechanic can erect the Andrews System in any building from complete plans and directions which we send with each heating plant.

This book should be in the hands of every contractor and builder. Send your address and names of others who expect to buy heating plants, and we will send our catalog postpaid. (See our special offer for such service.)

WE DO IT RIGHT IN 44 STATES, CANADA AND ALASKA. Our catalog contains a partial list of our customers from all parts of the country. Look them up and examine the Andrews System in your vicinity.

PRICES. We will sell you the plant with all material complete, pipe cut to fit, fittings, valves, gold bronze, brushes and all other material ready for use, with diagrams and directions so plain and simple that any man handy with tools can erect the plant and save money. You can in this way include the heating plant in your general contract for the building.

FACTORY TO USER. We design, manufacture, guarantee and sell each plant direct from Factory to User, giving you the lowest price for the value. Estimates free. ALL PLANTS GUARANTEED AND SOLD ON 360 DAYS' TRIAL FREE Freight rates equalized. **Old Houses Easily Heated.**

ANDREWS HEATING COMPANY 606 La Salle Building, Chicago
664 Heating Building, Minneapolis.

MANUFACTURERS CONTRACTORS CONSULTING ENGINEERS

FROM MANUFACTURER DIRECT
"EXCELSIOR"

COLONIAL COLUMNS

FROM MANUFACTURER DIRECT
"SUPERIOR"

HERE ARE TWO SPECIAL BARGAINS

These Columns are the very best Staved Columns on the market. No better built-up post can be manufactured.

OUR BUILT-UP COLUMNS
Will Not Open Up

This cut shows the "V" lock-joint giving one-third more pressure gluing surface than any other built-up column on the market.

THIS JOINT IS WHAT MAKES OUR COLUMNS GIVE SATISFACTION

PATENTED
JANUARY 17,
1905

CROSS-SECTION

SEND YOUR LISTS FOR ESTIMATES

BUY DIRECT

JUST NOTE THESE NET PRICES

STOCK SIZES	C-1525 WOOD CAP	C-1535 COMP. CAP.
8 x 8, 8 Feet	\$2.10	\$2.80
8 x 8, 6 "	2.20	2.95
8 x 8, 8 "	2.35	3.10
8 x 8, 9 "	2.55	3.30
10 x 10, 8 "	3.20	4.25
10 x 10, 9 "	3.45	4.50
10 x 10, 10 "	4.25	5.30

C-1556 Price, 10c
C-1546 Price, \$1.50

C-1525
Primed No 1
1½ in. Stave
Shows correct
swell proportion and
top and bottom members
of 2-in. stock.

C-1535
Primed No 1
1½ in. Stave
Furnished with
Best Composition
Cap.

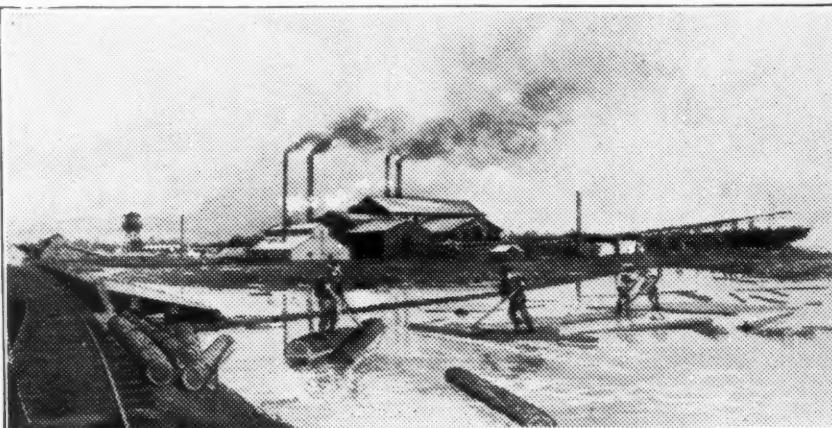
OTHER SIZES ON SHORT NOTICE

CHICAGO MILLWORK SUPPLY CO.
240 W. 20th St., CHICAGO

A New Way to Buy Lumber

Nowadays all sorts of merchandise is being sold direct from the manufacturer to the consumer, but it remained for the Independent Lumber Company to inaugurate a decided novelty in merchandising by offering lumber in carload lots direct from the mill to the consumer. Of course this means a saving of \$60 to \$100 on each carload to the small builder, carpenter or owner who is keen to appreciate the difference in cost of material after being freed from the middleman's margin of profit.

The popularity of this direct method of dealing is fully attested by the fact that the mill shown in the illustration is



but one of the four belonging to the Independent Lumber Company that are kept busy day and night cutting up lumber for their mill-to-consumer business.

Any person interested in building will do well to write the

Independent Lumber Company, Yard 6, St. Louis, Mo., for their prices, which are the same they quote to the largest lumber dealer in the country.

New Type of Mixer

Since February 1, the Cement Machinery Co., of Jackson, Mich., has been in a position to furnish to the trade a new mixer to be called Advance concrete mixer. This new mixing device has recently been tried and tested and proved to be very successful. It mixes accurately for any proportion from one to one to one to eight, and will mix gravel or stone as large as 3 or 4 inches in diameter. Heretofore continuance mixers have been furnished with screens of about $1\frac{1}{2}$ mesh. With the Advance mixer materials down to 98 fineness and up to crushed stone and very coarse gravel for heavy concrete work can be mixed. The feeding device is of the simplest, and operates on a well-known principle, which produces an accurate feed without any annoyance caused by materials clogging. The flights are a special pattern and are fitted loosely to the main shaft of the pug so that the material is not only thoroughly mixed by them but they can be taken off and cleaned in an instant when the mixer is not in use, in case the operator wishes to do so. The mixing barrel is of the best steel. The front

wheels are 28 inches in diameter and the rear wheels 40 inches, thus enabling the operator to move this machine around from job to job just as easily as he could move a wagon. The lower side of the hopper is claimed to be one-third lower than on



CARBORUNDUM



SHARPENING STONES

A skilled mechanic loves a sharp tool—Carborundum Sharpening Stones produce a keen, even, lasting edge—and do it quicker and better than any other sharpening stone on earth.

Carborundum Sharpening Stones are very hard and very sharp—They not only do their work better but they last longer—do not wear off in spots or become smooth and gummy. They are for sale by wide-awake Hardware dealers everywhere.



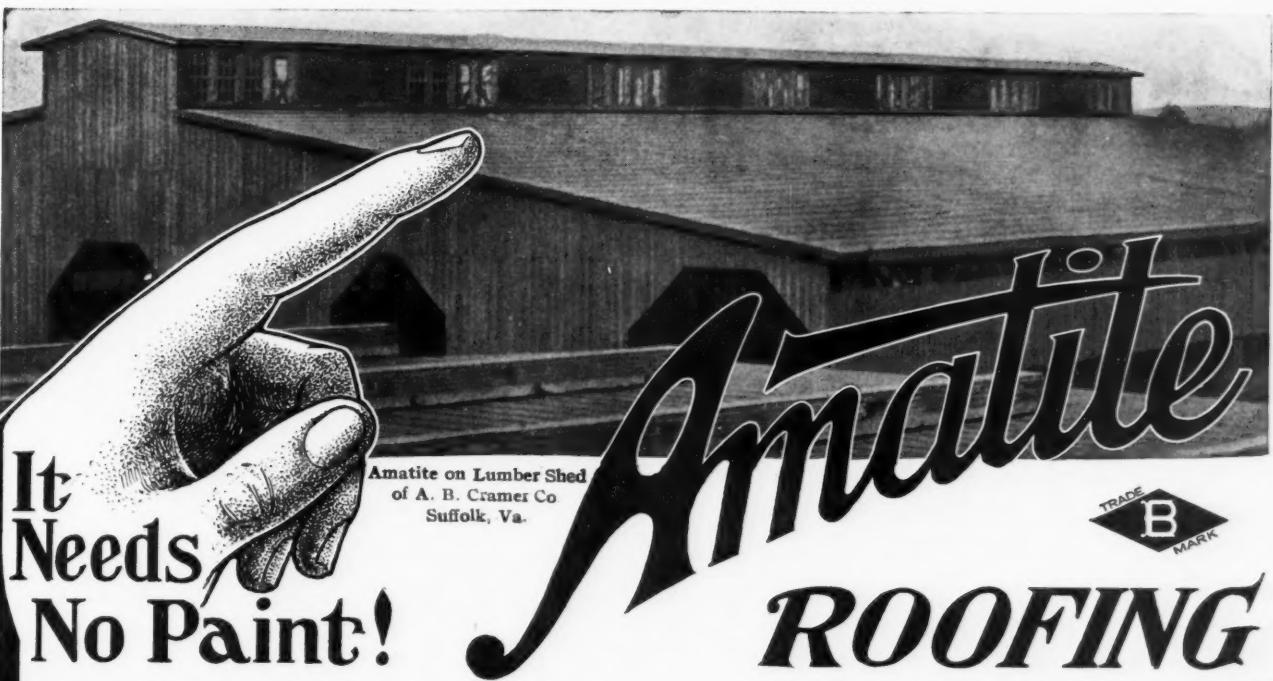
LET US SEND YOU THIS POCKET STONE

If you have never used Carborundum Sharpening Stones, let us send you this little "Machinists' Special" Pocket Stone—in neat case.

By Mail 35 Cents.

THE CARBORUNDUM COMPANY

Niagara Falls, : : : : : : New York



**It
Needs
No Paint!**

Amatite on Lumber Shed
of A. B. Cramer Co
Suffolk, Va.

Amatite

TRADE
B
MARK

ROOFING

MOST ready roofings require a certain amount of repairs and painting every season or two in order to keep them free from leaks.

This expense is now unnecessary. With an Amatite roof it is cut out entirely.

Paint offers only temporary protection at best. Every few years it must be renewed. When you buy a roofing that requires painting you are really buying two articles — roofing and paint—to do the work that *Amatite can do alone*.

Amatite has a real mineral surface. This top surface will withstand the severest kind of weather for many years and insures an amount of protection to your buildings that no other ready roofing can offer. Beneath this mineral surface are double layers of Felt and Coal Tar Pitch—the same waterproofing that is used by the United States Government at West Point, at some of the Navy Yards, at the New York Cus-

tom House, and many other such buildings. It is the *greatest waterproofing material known* and you are sure of getting it only when you buy Amatite.

With Amatite once on your buildings you do not have to bother with painting and coating. This is necessary with all smooth surfaced roofings, but with Amatite *that expense and trouble are entirely done away with*.

Although it has so many points of superiority, its cost is no more than the usual run of roofings; in fact, in many cases it is lower.

Is it any wonder that last year we were unable to supply the demand for Amatite?



Fac-simile of
Amatite Roll

FREE SAMPLE

Let us send you a Free Sample and Booklet which tells the story in detail

and shows photographs of buildings in many sections of the country which depend on Amatite for their protection against storms and weather.

BARRETT MANUFACTURING COMPANY

New York Chicago
Kansas City

Philadelphia
Minneapolis

St. Louis
New Orleans

Cleveland
Boston

Allegheny
London, Eng.

Cincinnati

other machines, thus enabling the operator to feed into them on either side with ease. The discharge end of this machine is high enough to allow for a wheelbarrow of any size to go under it. The company exhibited this mixer and a full line of cement machinery at the recent Buffalo show, where, it states, an excellent business was done. Write them for their Booklet "A," mentioning the AMERICAN CARPENTER AND BUILDER.

New Style of Yankee Tools

The need of a tool to drive screw eyes is evidenced in the number of attempts made to provide it, though nothing has been produced to be of practical value until now. The Yankee Screw Eye Driver has been tried practically and thoroughly by those who have to drive screw eyes largely, and pronounce it not only practical, but a tool that is much needed, as screw eyes are troublesome and tiresome to drive and only done slowly.

The Yankee Screw Driver consists of regular Ratchet Driver, with holder or fork on one end of blade. Outside there are two spring steel jaws fastened together at lower end, kept in place by ring surrounding them, which ring is fastened to fork on end of blade. A spring between fork and lower end of jaws keeps latter in position to hold screw eye, as shown in illustration. Pushing up the jaws with thumb of hand holding driver, the point of jaws readily open to insert screw eye, which should be pushed down into holder so it rests solidly in V-shaped groove. The jaws are then released and grasp screw eye as shown in illustration.

The ratchet movement is same as other Yankee Tools, right and left hand or rigid. The quality of materials and workmanship are of same high standard as all other Yankee Tools.

This Screw Holder is a simple, inexpensive, attachment to hold screw, put it in place, drive it in, especially in places difficult to reach and where only one hand can be used, and that does the work effectually without interfering with the ordinary use of the Screw Driver.

The attachment consists of two jaws, fastened to a head at one end, a ring to limit spread of jaws at other end and a spring to operate jaws.

When screw is ratched in place the jaws will open as the head of the screw sinks into wood, so screw can be driven in flush with surface without having to unfasten holder. It releases automatically. In many places where it would be annoying to drop a screw in removal, it can be partly turned out, holder slipped over it and removed in holder. In ordinary



work where screw holder is not required it is pushed back on blade toward handle, as in illustration, where it will stay out of way and yet ready for use at any moment.

The Screw Holder Attachment is furnished only attached to "Yankee" Ratchet Screw Drivers. It cannot be furnished separately for tools already in use, as the holder must be fitted to blade. For full particulars and circular write to North Bros. Manufacturing Company, Philadelphia, Pa.



WHEN WRITING ADVERTISERS PLEASE MENTION THE AMERICAN CARPENTER AND BUILDER



means much. Our Boss Carpenter gives some points on our saw.

"Every carpenter wants a good **cutting** saw, for a dull saw means extra labor and most of us get tired enough."

You can't keep your saw sharp unless it's tempered right, this is where the Simonds people are strong. They have a special patented process.

Another point, because the **SIMONDS SAW IS MADE OF SIMONDS STEEL** you are sure of getting the finest crucible steel, made especially for this saw in their own mills.

Now here's another point, you're never sure of a saw that isn't trade marked. The trade mark means the makers are back of it.

It's a fact

THE SIMONDS SAWS ARE BEST And They ARE Best

In a nutshell:—Buy a Simonds Saw, because it's made right, tempered right and cuts right.

You'll know it by the trade mark.

Save extra work by using a Simonds Saw and my advise is **buy it now**.

If your dealer don't keep them write to headquarters. Tell them what kind of a saw you want and ask for a free copy of "Simonds Carpenter Guide," a valuable booklet.

SIMONDS MFG. CO.
FITCHBURG, - MASS.

Chicago
San Francisco

New York
Portland

New Orleans
Seattle

Climb to your level

It's ambition that distinguishes MAN from the lower animal. MAN'S natural tendency is to **climb**—to seek HIGHER LEVELS. If you are not advancing it is your own fault. Here is an opportunity for YOU NOW.

CYCLOPEDIA OF
Architecture, Carpentry and Building

Ten Massive Volumes, each nearly one foot high, handsomely bound in red half morocco. Over 4,000 pages; 3,000 illustrations, full page plates, plans, sections, etc. Printed on highest grade paper; entirely new type—DE LUXE books in every particular. This work fully covers everything pertaining to building. It is a masterpiece of complete, concise, practical "ready-to-use" information. Every demonstration is derived from the practical experience of the greatest expert in the building industries of the world. **We employ no agents to annoy you**, thus giving us the opportunity of selling direct to you at the very lowest price.

To the up-to-date builder, the most important subject today is the use and possibilities of **Reinforced Concrete**. The cyclopedia contains the latest and most comprehensive information on this subject, written especially for **home study** by the men who are responsible for the tremendous advance and popularity of this new building material.

In the every day matters of the trade the Cyclopedia is an invaluable guide. It tells you how to plan a house, estimate its cost, buy the material, decorate it inside and out, and save money for yourself and your client. It is especially good on house sanitation—plumbing, heating, and ventilation—a subject concerning which you cannot know too much.

Free for Examination \$19.80 instead of \$60.00 No Advance Payment

Sent by prepaid express. Pay \$2.00 within 5 days and \$2.00 per month if you wish to keep the books; otherwise notify us to send for them at our expense. **In any case you lose nothing.**

The work contains over 200 plans of artistic moderate priced houses, chosen by a staff of architects as typical of the best work of the best architects of the entire country—valuable to anyone contemplating building or alterations. **Also over 40 practical problems in construction** with solutions.

The hundreds of hints and suggestions to house builders and house owners in this work will save many times its cost. The chapters on plumbing, heating—including furnace, steam, hot water, and exhaust steam—and ventilation, are especially complete, as are also the chapters on estimating, the law of contracts, liens, etc., specifications, superintendence, hardware, painting, plastering, etc.

PARTIAL LIST OF CONTENTS

Reinforced Concrete: Testing, Mixing, Frost Effects, Finishing, Construction Forms, Retaining Walls, etc.; Structural Steel Buildings; Practical Problems in Construction with solution; Estimating; Superintendence; Contracts and Specifications; The Law of Building Contracts; Materials; Masonry; Foundations; Carpentry; Stair-Building; Framing; Steel Square; Plastering; Hardware; Painting and Glazing; Heating—Furnace, Steam, Hot Water; Plumbing; Ventilation; Electric Wiring for Bells, Lights, Burglar Alarms; Elevators; Architectural Drawing; Mechanical Drawing; Freehand Drawing; Perspective Drawing; Shades and Shadows; Architectural Lettering; Rendering in Pen and Ink and Wash; Water-Color Hints for Draftsmen; The Greek and Roman Orders of Architecture; Roofing; Tinsmithing; Sheet Metal Cornices; Skylights; Test Questions.

AMERICAN SCHOOL of CORRESPONDENCE
CHICAGO

NAME.....
 ADDRESS.....
 OCCUPATION.....
 EMPLOYER.....

Am. Carp. and Build. 4-08
American School of Correspondence

Please send set Cyclopedia Architecture, Carpentry and Building for 5 days' free examination. I will send \$2 within 5 days and \$2 a month until I have paid \$19.80, otherwise I will notify you to send for the books.

A Perfect Safety Razor for 25 cents

One of the most practical, popular-priced articles on the market is the Shrp-Shavr Razor ("It's all in our blade"), which is being manufactured by Smith & Hemenway Co., an old established hardware and cutlery manufacturers of 108-110 Duane street, New York. This concern has been in the razor business for the last twenty-eight years and are thoroughly conversant with what is required for a razor to make it satisfactory to the user.

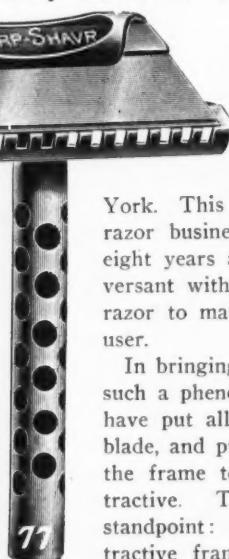


Fig. 1

of the razor blades is what is wanted more than a fancy frame.

Figure 1 represents the No. 77 Shrp-Shavr razor, which retails in the United States at a popular price of 25 cents with one blade, put up in a neat cardboard carton, with a circular wrapped around it giving full instructions how to use it.

Fig. 2 represents a package consisting of five No. 78 Shrp-Shavr Blades, sold at a popular price of 5 cents each, or 25 cents for the package.

Fig. 3 represents a No. 79 Stropper. With this stropper the blades can be used an indefinite length of time.

One purchaser makes the statement that he has used one blade continually since he bought his razor, two months ago, and that it shaves as perfectly now as it did the first days that



Fig. 2

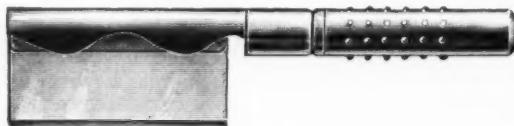


Fig. 3

he bought it. The manufacturers state that the material they use in the Shrp-Shavr Blades is the best that money can buy, and their motto is: "Satisfaction guaranteed or money refunded, without any questions asked."

See their advertisement on page 123.

Ancient vs. Modern Methods

The last few years have brought many great changes in building and building construction. The old methods used in fastening woodwork to brick, stone or cement walls are

Classified Advertisements.

Advertisements under this heading will be inserted at the following rates:
 One month \$0.45 per line
 Three months 1.25 per line
 Six months 2.25 per line
 One year 4.25 per line
 Count 10 words to the line. Situations wanted one-half above rates.
 Replies may be addressed in our care and will be promptly forwarded.

Help Wanted.

FREE PENCILS TO CARPENTERS, see ad. on page 14. Gage Tool Co.

WANTED—Foreman to superintend construction of cottage dwellings. Must be sober, steady, industrious and reliable. Address T. S. McAnally, Mangum, Okla.

For Sale.

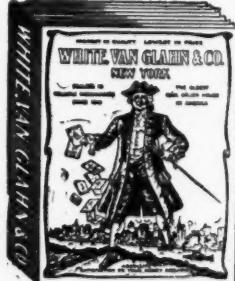
FOR SALE—Two concrete block machines, first-class in every respect, only used once. Address, T. REED CHUNN, care of Edwards Manufacturing Co., Cincinnati, Ohio.

SASH, DOOR AND BLIND FACTORY FOR SALE—Public Sale on April 6th, 1906 to the highest bidder, a large Sash, Door and Blind Factory and Planing Mill on the Black Water River and L. & N. Railroad in Santa Rosa County, Florida. The property has a cash value of at least \$60,000.00 and is in a very desirable location.
 THE FISHER REAL ESTATE AGENCY, Pensacola, Fla.

Patents.

C. L. PARKER, Solicitor of Patents, 20 Dietz Bldg., Washington, D. C. Handbook for inventors sent free upon request.

Before You Spend Another Cent



Write us for a free copy
of this Catalogue No. 94

It Will Save You Many a Dollar

This Big Book of 700 page lists, illustrates and describes over 70,000 articles for the shop, farm and home, all at lower prices than you can buy them in any store anywhere. It is FREE.

We Sell to You at Wholesale Prices in small quantities or large. You save the usual dealer's profit. Our line of FINE HIGH GRADE TOOLS—every one of them guaranteed—has never been approached in any catalogue. Give us a fair trial order and satisfy yourselves that all we say is true. Money back if not satisfied.

New York the Cheapest Market Almost everything sold by catalogue comes from New York. Thousands of buyers come here every day to make their purchases. You can do as well or better and save time and traveling expenses if you have our catalogue.

We Sell Reliable Goods Only We have been continuously in business since 1816, and have the books to prove it. We can't afford not to give you the best value for the money. We guarantee safe delivery of everything ordered from us. We refer, by permission, to the publisher of this paper as to our absolute responsibility. Even if you want nothing today you may tomorrow. Get the Catalogue now. It contains list of over 100 premiums we give FREE to our customers. Address

White, Van Glahn & Co., No. 3 Barclay Street
Oldest Mail Order House in America. NEW YORK CITY
Established 1816

ATTENTION, CONTRACTORS

You cannot afford to be without Grinnell's Estimator and Builder's Pocket Companion. A handbook for Carpenters, Masons and Painters. Anyone of many of its pages is well worth the price of the whole. Send \$1 and be convinced, remembering that if not satisfactory your money will be refunded on receipt of book. Address Grinnell Pub. Co., Medina, N.Y.



SUCCESS!

IS YOURS, Mr. Contractor, if you can estimate accurately. Failure is usually the result of a lack of accurate and reliable methods used in estimating the cost. The up-to-date builders are adopting The Lightning Estimator as the standard for estimating residence work. **Why?** Because it teaches easy, simple, rapid, reliable and accurate methods, all based upon actual cost of labor and material. Largest endorsement and sale of any book of its kind now on the market.

Lessens the risk of errors and omissions which often cause loss. Based on actual experience, not theories. Treats residence work from start to finish exclusive of plumbing and heating. While it is a book particularly for the carpenter, it includes masonry and concrete work, as required on residence work. It is brief and to the point, each subject being easily found and plainly treated. Put your business on a better basis by sending a **one dollar** money order today for a copy of the new fifth edition.

BRADT PUBLISHING CO.

1260 Michigan Avenue : : : Jackson, Mich.

Examine This Point Carefully

Petz
Patent
Store Front
Construction

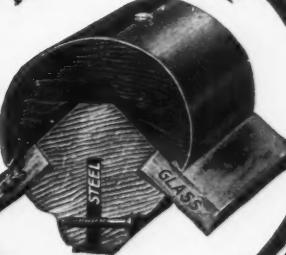
Progressive merchants are now insisting on store fronts that are hand-some in appearance with a maximum of display room and light in their windows.

The Petz system is strong, slight and allows the glass to be set from the outside, saving time and trouble. Its handsome finish appeals to the highest class of trade, and contractors will please their customers and add to their business reputations by specifying in every instance the Petz store front construction.

Endorsed by all plate glass insurance companies. Our valuable booklet on modern store fronts sent free. Write for it.

DETROIT SHOW CASE CO.
491 West Fort Street DETROIT, MICH.

MADE IN DETROIT

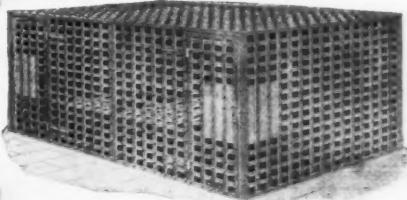


WE CAN SAVE YOU MONEY
—ON—
Jail Cells and Window-Guards

FIRE ESCAPES, IRON STAIRS, FENCING AND ARCHI-
TECTURAL AND ORNAMENTAL IRON WORK

Catalogue on Request

OHIO STRUCTURAL IRON COMPANY
Warren Street SANDUSKY, OHIO



LIGNINE CARVINGS, UNBREAKABLE

Will they break or check? No Sir! Will they crack or shrink? No Sir!

LIGNINE CARVINGS are stronger than wood.

Are attached by nailing and gluing. Are finished with filler or stain.
Write for sample and catalogue showing Capitals, Pilasters, Newel Ornaments, Drops, Rosettes, Scrolls, Shields, etc.

ORNAMENTAL PRODUCTS CO., 552 W. Fort St., DETROIT, MICH.



“NICE” LIQUID WOOD FILLER THE RECOGNIZED STANDARD SURFACER

It dries flat, works freely, does not show laps and requires little, if any, sandpapering. Light shade is perfectly transparent and will not mar the color of the lightest woods. It enables the finisher every time to make a high-class job with two coats, one of “Nice” Filler and one of Varnish or Hard Oil. It makes the very best flat stain by simply adding color in oil to suit. It has remarkable covering capacity (800 square feet to gallon) and is the most durable coating known for natural woods.

Will you let us send you our booklet “Natural Wood Finishing,” just off the press? It’s worth having and will only cost you a postal.

EUGENE E. NICE, Manufacturer of everything in Paints, Fillers and Varnishes for interior and exterior painting and finishing 272-274 S. 2d St., Philadelphia

now obsolete. Instead of nailing into the mortar joint or nailing into wooden plugs driven into the wall—which was by far the best of the old methods—the modern builder uses the metal wall plug, and uses it at less cost, when time is taken into consideration.

J. B. Prescott & Son, of Webster, Mass., are, and having been placing on the market for several years the Ratty Metal Wall Plug, which holds the nail with a grip of steel so that it virtually becomes as a unit with the masonry.

They can be depended upon at all times to hold and hold fast. It pays to use them.

Not only do the Prescotts manufacture wall plugs, but also a complete line of non-furring plugs, steel wall ties, steel veneer ties, steel anchors and steel corner head.

A card mentioning the AMERICAN CARPENTER AND BUILDER will bring you descriptive literature which will interest you.

Good Tools vs. Mere Tools

There are on the market at the present time many brands of tools, some of which are worthy of the name, while other are not, and in tool making, experience is the very best teacher.

In 1832, G. R. Barton started in this line, not to make a passable tool, but to make the best tool possible, and apparently he accomplished his end. A few years later, W. W. Mack became a partner in the firm, and after the death of Mr. Barton, the business was left in the hands of Mr. Mack, who pursued the same policies as those of Mr. Barton, viz., to make the best tool possible regardless of expense.

And today the policy of the firm is still the same. Practically all the work done on the celebrated Barton Tool is accomplished by hand, and consequently where others in this line of work have had difficulty in running at all during this recent financial flurry, Mack & Co., of Rochester, N. Y., have been running their plant steadily.

Mr. Carpenter, you need good tools. Write these people for their catalog, specifying that you want particularly the "Carpenters' Catalog," and your stamp and time consumed in doing so will be a good investment.

Heating a Home

There is absolutely nothing that enters a home upon which the health and comfort of the family so much depend as a furnace, and too much care cannot be taken in making a selection. We take pleasure in bringing to our readers' attention in this issue the advertisement of the Schill Brothers Co., Crestline, Ohio., manufacturers of high grade warm air furnaces.

The Schill furnaces have found their way into every state where furnaces are used. With becoming modesty this company does not attribute its rapid growth to shrewd manage-



Genasco Ready Roofing

The only roofing worth having is one that stays waterproof.

And the only roofing that stays waterproof is made from the great natural waterproofer—Trinidad Lake Asphalt.

Ask your dealer for Genasco. Don't accept a substitute. Write for book 76 and samples.

THE BARBER ASPHALT PAVING COMPANY

Largest producers of asphalt, and largest manufacturers of ready roofing in the world

PHILADELPHIA

New York San Francisco Chicago

THE BEST QUALITY. THE LOWEST PRICES
Samples and Prices on Application

MINERAL WOOL

For Heat, Cold, and Sound Insulation, and General Fire-Proofing
Vermilion Cannot Live in Mineral Wool
Made by PENNSYLVANIA MINERAL WOOL CO., Norristown, Pa.

SLATE WE HAVE WHAT YOU WANT

*In Roofing Slate, Slate Blackboards
Structural and Plumbers' Slate*

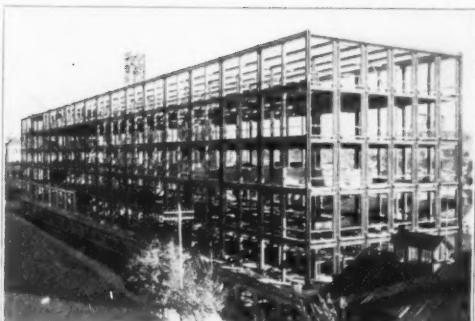
SATISFACTION GUARANTEED IN QUALITY AND PRICE

ASK FOR DELIVERED PRICES

J. K. HOWER, Station C., Slatington, Pa.

H. J. KICHLIN, Sales Agent

"Creole"
"Etowah"
"Cherokee"
"Kennesaw"} **Georgia Marble**
THE GEORGIA MARBLE CO., - - TATE, GA.



The Architect's Problem

Preservation of Steel and Iron in all Structures

The corrosion of steel, reinforcing fabrics, and exposed iron in buildings causes constant concern.

The preservation and protection of steel has been the subject of scientific and practical experiment by our corps of experts for many years.

Red Lead mixed by hand used to be regarded as the best coating, but it works hard and settles quickly.

Lowe Brothers Red Lead Metal Preservative

being a highly ground paint, overcomes these difficulties, covering perfectly, spreading easily, remaining in suspension indefinitely. It is the best preservative offered today, and is specified and used by many of the largest railroads and contracting bridge companies in the country.

A few dollars invested in the early part of the building means years of wear and assures safety. "Preservative and Protective Metal Coatings" tells how to do it. Shall we send it to you? See Sweet's Index, pages 1378-1379.

The Lowe Brothers Company

Established 1862 Paintmakers—Varnishmakers
450-452 E. Third St., Dayton, O. Chicago New York Kansas City

Roofing Slate

TRY A CAR FROM THIS LINE

Genuine Peach Bottom
Genuine Bangor
Big Bed Lehigh

Keystone Chapman
Jackson Bangor
Penn. Hard Vein

Jobber in Sea Green, Unfading
Green, Mottled Purple, Variegated
Purple and Bright Red Slates

Sales Agent, Eastern Pennsylvania and Southern
New Jersey, for

AKRON ROOFING TILE CO.,
Manufacturers of Vitrified Roofing and Floor Tiles.

NO BETTER LINE OF ROOFING
COMMODITIES ANYWHERE

Write me at 303 Builders' Exchange,
Philadelphia, Pa.

R. T. CROPPER

PHONE: Bell 4693, Filbert; Keystone 1525 Main

GENUINE BANGOR

Roofing Slate,
Structural Slate,
Blackboards.

Large Facilities, Prompt Deliveries
EAST BANGOR CONSOLIDATED SLATE CO.

East Bangor, Pa.

WOOD ROLLING PARTITIONS

FOR CHURCHES, SCHOOLS and PUBLIC BUILDINGS

FLEXIFOLD DOOR & SHUTTER CO., Worcester, Mass.
WRITE FOR CIRCULARS

ESTABLISHED 1884

THE E. J. JOHNSON CO.

38 PARK ROW
New York

Slate Blackboards

Producers of

Branch Office
626 Park Building, Pittsburg, Pa.

Large Stocks

Prompt Shipments

Correspondence Solicited

ROOFING SLATE

DOW
Wire & Iron Works
(Incorporated)
LOUISVILLE, KY.

IRON LINTELS
Beams, Angles, Anchors, Hangers,
Ornamental Cast Iron Fronts and Stairways.

ment, but to the good judgment of the American people who know a good thing when they see it.

The illustration herewith shows their latest combination coal and gas furnace. A splendid feature of this furnace is that gas, hard or soft coal, coke or wood can be burned without change or without interfering with one another; or, if de-



sired, any of the above named fuel and gas may be burned at the same time. Without doubt this is the most perfect combination furnace ever invented. Those who have used them recommend them very highly.

In durability the Schill furnaces lead all others. Other manufacturers have spent fortunes trying to get a fire pot that will not crack after a few years' hard service. In the Schill furnaces the fire pot is already full of holes and if it should crack or break from any cause it would only add to its good qualities, as the steel jacket around it forms the gas joint, which prevents all dust from escaping.

Space does not permit us to bring forth the many strong points of the Schill furnaces. This Company will be glad to send their beautiful catalogue and full information to interested readers. Why not send them the plans of your house also, and let them send you an estimate for a heating system that is guaranteed to give satisfaction to your customers? Address The Schill Brothers Co., Crestline, Ohio.

The Weber Double-Acting Floor Scraper

Undoubtedly the most practical floor scraper yet placed on the market is advertised on page 4 of this issue. It is the Weber Double-Acting Floor Scraper, which may be operated in either direction. John F. Weber, the inventor, has gone over every possible requirement for the perfect scraper, and before placing his machine on the market was sure that he had it perfected.

The Weber double action ball-bearing scraper fulfills the long felt want in that it takes only three-fourths the time of any other scraper and one-sixth the time of any hand scraper. The force exerted is always the same so that it is impossible to do uneven work. The knife shoes work on half ball bearings, and are always ready for work. A lever on the handle releases the clutch so that the knives may be raised and lowered as the machine is moved backward and forward. The machine is so simple that it can't get out of order, and the knives are of the finest grade of steel and will last for years.

The Weber Double-Acting Floor Scraper has knives both in front and in back, so that it can be either pushed or pulled. The adjustment of the handle is such that it may be raised to a vertical position, so that the machine may be worked in a narrow hall, even if it is not more than two feet in width.

The Weber Manufacturing Co., of 665-667 71st avenue,

West Allis, Wis., manufactures the machines, and will be glad to send to those interested fully illustrated circulars and testimonials. This company also manufactures the Weber Sand Paperer and Polisher, the Weber Bowling Alley Jointer and Scraper Shoe, and the Weber Automatic Sharpening Device. This last is the most remarkable little tool ever invented, making the best possible cutting edge, and may be used on any machine.

Some Books Worth Having

Would you like to know the ins and outs of plumbing and gas fitting? Then read the offer of The Marvin Publishing Company on page 119. This firm offers to our readers four of the best books ever published on the subject of plumbing and gas fitting.

If you are interested in building, either as a contractor, architect or owner, or in any other capacity, these books will be found indispensable, and the price at which you can own them is so moderate as to put them easily within your reach.

Note the books and contents:

Practical Plumbing by Questions and Answers.—Covering the theory and practice of plumbing and sanitary engineering in all its branches.

Practical Lead Worker and Joint Wiper.—Covering every detail in joint wiping from cutting and preparing the pipe, wiping every kind of joint, soldering lead pipe, bending, etc., etc.

Modern Plumbing Plans.—Over 125 plans, elevations, drawings and details showing how to connect every kind of fixture, etc.

Modern Gas Fitting Plans and Rules.—Over 100 plans, elevations, details, etc., covering the piping of stores, buildings, dwellings, flats, schools, etc.

Spring building is now under way—perhaps the very thing you want to know or decide, can be found answered in one of these books. The price for the set complete may be saved you many times over.

Send your order in today—do it now. Address the Marvin Publishing Company, 402 Century building, Kansas City, Mo., and mention the AMERICAN CARPENTER AND BUILDER.

Steel Miter Box

The Goodell Manufacturing Company, of Greenfield, Mass., in designing their miter box, ad. for which appears on another page in this magazine, have endeavored to see how good a box could be made, regardless of cost, and they believe that in quality it will be found in a class by itself, not only in quality of material used, but also in many improvements.

First of all, it is made from Bessemer steel, thus doing away with all liability of breakage and making it much stronger and firmer than most of the other boxes now on the market.

It will last a lifetime, and will be greatly appreciated by those who have been having so much trouble with broken parts from boxes made from other metal.

This miter box is graduated and thereby much time is saved in making changes, especially if two opposite cuts are wanted at exactly the same angle.

It has automatic stops to hold up the saw, allowing the operator to use both hands in placing work.

Its operation is extremely simple, there being no complicated parts.

Full description of the "Goodell" may be had by dropping them a card. In writing the Goodell Manufacturing Company, Greenfield, Mass., please mention this paper.

Sanford Concrete Machinery Company

The Sanford Concrete Machinery Company has been evolved from the old firm of the Sanford & Painter Company,



4 BOOKS \$1.00 Each

Acknowledged by all experts to be the most complete up-to-date and practical books ever written upon the following subjects:

Practical Plumbing by Questions and Answers

Covering the theory and practice of Plumbing and Sanitary Engineering in all its branches.

Practical Lead Worker and Joint Wiper

Covering every detail in joint-wiping from cutting and preparing the pipe, wiping every kind of joint, soldering, lead pipe bending, etc., etc.

Modern Plumbing Plans

Over 125 plans, elevations, drawings and details showing how to connect every kind of fixture, etc.

Modern Gas Fitting Plans and Rules

The only book of its kind ever printed. Over 100 plans, elevations, details, etc., covering the piping of stores, office buildings, dwellings, apartments, residences, flats, schools, etc.

These books will be found indispensable to all Plumbers, Architects, Plumbers' Helpers, Gas Fitters, Builders, Sanitary Engineers, Inspectors, Physicians, those preparing for plumbers' license examinations, and also for property owners who desire to do their own plumbing and gas fitting. These books are all illustrated with hundreds of plans, elevations, details and half-tones.

Price, \$1.00 Each

Address all Mail to

THE MARVIN PUBLISHING CO.

402 Century Bldg., Kansas City, Mo.

CONGO ROOFING



There is one kind of ready roofing which is absolutely waterproof and meets all the requirements of a ready roofing; that is Congo.

It is aptly known as the "never-leak" roofing.

But Congo is not only waterproof; it is also proof against heat, cold and acid fumes.

It is made to last and experience shows that it does last.

The strong point about Congo is the wonderful pliability. It bends like rubber, looks like it, and keeps the water out the same as real rubber would.

FREE SAMPLE

Don't buy your roofing this Spring until you examine a sample of Congo; and remember, Congo samples are not special pieces prepared for the purpose, but are cut from our regular stock.

We mention this because Congo is so attractive looking, so tough and pliable that people sometimes think the samples must be specially prepared.

UNITED ROOFING AND M'F'G. CO.

Successors to Buchanan Foster Co.

555 West End Trust Bldg., PHILADELPHIA, PA.
CHICAGO

SAN FRANCISCO

"EASTLAKE" Metal Shingles



For roofing all buildings with one-quarter pitch or more.

NEVER LEAK

They reduce the fire risk, and cost of insurance. Superior and cheaper than wood shingles. Any good carpenter or mechanic can lay our shingles.

Tools Required— Hammer and Shears

Write for Catalogue and Prices

THE W. J. BURTON CO.

Manufacturers of all kind of Roof Trimmings

DETROIT

MICHIGAN



Send us two or more names of persons who are interested in or want to buy Hot Water Heating Plants and we will send this scale. Back inches are divided into 6, 10, 12, 16, 20 and 40 parts. Also free catalog on request. our two-page ad in American Carpenter and Builder for January, 1907.

ANDREWS HEATING CO. 949 Heating Bldg. Minneapolis.

978 La Salle Bldg. Chicago.

WHO WANTS SLATE?

Roofing Slate for Houses, Barns, etc. Always clean, beautiful and fireproof. Blackboards for Schools, Colleges, etc. Needs no commendation; universally used all over this and other countries.

Structural Slates. Electrical Stock, Sinks, Troughs, Washubs, etc. Superior to all stone for such purposes.

Slates' Supplies. Handmade Slating Tools, Felt, Cement, Nails, Snow-guards, Punching Machines, etc.

Write for prices and I will tell you all about Slates.

DAVID MCKENNA, Slatington, Pa., U. S. A.

of Toledo, O., manufacturers of the well-known Sanford veneer and hollow block press. E. J. Long, a manufacturer of Cleveland, O., is president of the new company; Hon. A. M. Abbott, of Toledo, O., is secretary-treasurer, and Jos. I. Cox, general manager. The company has moved to larger offices than they formerly occupied, the general offices now being at 1645, 1646, 1647 Nicholas building, Toledo, O.

A new and important improvement upon the Sanford press has been made, and the new company will push the manufacture of this machine, and will be able to take care of a large number of orders that have been coming their way.

The new organization will also carry a full line of mixers, cars, architectural molds of all designs, lintels, caps and step molds, burial vault molds, and in fact, a complete line of cement working machinery.

They are going to open a large demonstrating room, at which place all of the various machines may be seen in operation in Toledo, at once, and they also expect to establish two more in different sections later on.

A new and competent sales force is being organized, and the Sanford press, together with the other equipment carried, will be put upon the market in the same old way, strictly upon their merits.

The Crown

The Crown nail puller and band cutter for sale by the Snow & Petrelli Manufacturing Company, of New Haven, Conn., has attained a large degree of popularity since its invention several years ago, among its thousands of satisfied users.

It is claimed that it will pull nails faster than any other and will cut and rip off bands very rapidly.

The jaws of this little tool will not break, this is making rather a bold assertion, but they are made from special steel, polished and tempered. In its construction, which is along very simple lines, there are no springs to break, and it is so built so that it will not pinch the fingers as so many other pullers are prone to do.

By its use you can save your time, your nails and your strength.

A card mentioning this paper will bring you illustrated catalog. Write them today.



Another Cortright Patent

Under this heading appears an article in the March issue of the Cortright Metal Shingle Advocate, issued by the Cortright Metal Roofing Company, of Philadelphia, that leaves no doubt as to the course this company intends to pursue in regard to the protection of its interests.

Evidently, from the tone of the article, they have positive proof that an attempt is being made to place on the market a shingle bearing a striking resemblance to the Cortright design, so in order to protect their customers from being deceived they announce that commencing with January 1, 1908, every shingle turned out by them will bear the embossed stamp "Cortright," Reg. U. S. Pat. Off. on the first corrugation at the top of the shingle.

There does not seem to be any excuse for infringement of designs, especially at this time when architects, contractors, builders, and general roofers are giving so much attention to metal shingle roofing. It would see to us that every

manufacturer would be anxious to get as far away from other designs as possible in order to have something distinctly different to offer those interested.

The Cortright Company have repeatedly made the statement in the Advocate that they are not trying to compete with the cheap make of shingles.

Their slogan has always been: "Not how cheap, but how good." Quality talks in the long run.

"Cortright Shingles last as long as the building itself" is a statement repeated in practically everything they issue.

An Aluminum Letter-Opener Free

The Eller Manufacturing Company, of Canton, Ohio, are sending out a neat little aluminum letter opener, which also contains a six-inch rule, to those who are interested in fine metal ceilings. If you will write them on your letter head, they will be very glad to send you one of these little devices.

Capacity of Roofing Factory Trebled

One of the strong evidences of the healthy conditions in the building industry is the increase in the factory capacity of the Heppes Company, Chicago, manufacturers of Heppes No-Tar Roofing. To cope with the big demand for No-Tar Roofing, the company found it necessary to treble its factory capacity. The roofing demand is a good barometer of the building situation.

Heppes No-Tar Roofing stands very high in the estimation of builders. It is a standard product handled by the best hardware and lumber dealers throughout the country. There are so many inferior brands of roofing on the market that the building contractor cannot be too careful to specify a tested brand, that has a reputation behind it. Heppes No-Tar Roofing has won out on its merits. It is not in competition with the "Tar Felt" counterfeits. It sells at a fair price and every square is full value, made of genuine long-fiber wool felt, water-proofed with the best asphalts, coated with flint on the weather side and mica on the under surface.

The Heppes Company puts out a valuable "Roofers' Book" and "Diagrammed Instruction Sheet," which any carpenter and builder can get free upon request.

Now is the time for carpenters and contractors to get prices and samples of Heppes No-Tar Roofing, so as to be ready for spring business with a line of roofing that is bound to give satisfaction. Write to the Heppes Company, 624 S. 45th avenue, Chicago, and ask for their special prices to contractors. They send large samples of all the different weights of No-Tar Roofing free, together with instructions for making ten tests. These tests tell the story of quality. Don't be afraid to ask for the free book and samples, for the Heppes Company will be glad to supply them. Their advice and help will prove of great assistance to you in building up a profitable roofing business.

Wall Hanger Free

The Hartman-Sanders Co., of Chicago, Ill., with a New York office at 1123 Broadway, sole manufacturers of Koll's Patent Lock Joint Columns, announce that they have ready for distribution a very interesting wall hanger, showing thirty views of porch columns. This covers all of the classic and modern designs and makes a valuable reference chart for anyone interested in the design or sale of goods of this character. With the present facilities, they can produce 60,000 high grade columns at an average cost of \$5.00, or 6,000 columns at \$50.00, per annum. They have, without a question, the largest plant of its kind in the world, devoted exclusively to the production of columns and porch material. The chart mentioned will be sent free of expense on asking for No. 38.

FORD'S GALVANIZED RUBBER ROOFING

Forty Years of Reputation
Behind it



"GALVANIZED"

That Word Means Something

In the manufacture of **Ford's Galvanized Rubber Roofing** a special process is used which is the development of forty years experience. The process involves extreme heat and great pressure. The result is a roofing which absolutely resists the elements, wind, rain, hail, heat and cold. The quality of the elastic mineral coating is such that extremes of temperature do not affect it.

It is equally good on the shack on the Yukon, the factory, home, school or shed in a temperate climate, or the bungalow in the tropics.



OUR OWN PRODUCT

We Guarantee It

We manufacture every square foot of **Ford's Galvanized Rubber Roofing** in our mills. We know every ounce of material used. We keep it uniform in quality and right in price, because from the raw material to the finished roll it is our own product. Very few self-styled manufacturers of ready-to-lay roofings make the products they sell entirely. We do.

It is odorless, and for this reason the lighter plies may be used for sheathing, keeping the building warm in winter, cool in summer.

"As Good
as the
Best
and Better
than the
Rest"



Easy
to Lay
Requires
No
Special
Tools

This view shows Three Ply "Ford's Galvanized Rubber Roofing" being laid on the New Hampton Auditorium, New Hampton, Ia. The cut below shows the completed structure.

THE POSITIVE GUARANTEES WE GIVE

The guarantees named below are positive and are **Based on Actual Time Tests** in all climates and under all conditions.

ON THREE PLY

We give guarantee through dealers direct to consumer or contractor for **15 Years** on Three Ply.



ON TWO PLY

We give guarantee through dealers direct to consumer or contractor for **10 Years** on Two Ply.

ON ONE PLY

We give guarantee through dealers direct to consumers or contractor for **5 Years** on One Ply.

WARNING

This roofing cannot be bought of "mail order" or "catalog houses," and the public is warned against cheap imitations sold under names closely resembling our brand. **FREE:** We will send free samples, special roofing information, and names of nearest dealers, free to all who write.

SEND FOR FREE SAMPLES TODAY

FORD MAN'FC. CO. 131 W. Wash. St.
ESTABLISHED 1865 CHICAGO

Increased Use of Concrete in Porto Rico

The value of concrete as a building material has been fully recognized on the island of Porto Rico and today is playing a most important part in construction of all kinds. Credit is due the Century Cement Machine Company, of Rochester, N. Y., who through their able representative, F. B. Hatch, of San Juan, introduced the first concrete block machine on the island, and today have seventeen of their well known Hercules machine in active operation in various parts of Porto Rico.

Mr. F. B. Hatch alone constructed in 1906 buildings costing over \$80,000, and among these a warehouse for the Porto Rican American Tobacco Company, 368 feet long.

The Board of Education has recommended and endorsed concrete blocks as made on Hercules machines, and as a result, they are being used in the construction of all educational institutions throughout the island.

While concrete blocks have been playing a great part in construction, there is also a wide field for street improvement. The Century Cement Machine Company recently placed in the city of Arecibo one of their outfits for making and laying combined curbing and gutter, and as a result, Mr. Arturo Prado has the honor of laying the first concrete curbing and gutter ever seen in Porto Rico. The mayor of Arecibo and the city engineer have both complimented him highly upon the fine appearance of the city streets and it is but a question of a short time before all the leading cities will specify concrete curb and gutter.

Their Largest Year's Business

The W. J. Burton Company report their business for the past year has succeeded any other year by a good margin, and that the prospects show a very large increase on their celebrated Eastlake Metal Shingles shown in this cut, manufac-

tured by them for more than twenty years. These shingles are more durable than wood shingles or slate, and can be laid for one quarter the cost of labor, which makes them considerably cheaper. A very important feature of this shingle is a telescopic side lock, so constructed as to allow for expansion, and their system of joints makes leakage and wear impossible. The Eastlake is made in plates twenty by twenty-eight inches, each embossed with the pattern of nine slate or shingles, and when painted black closely duplicate the appearance of the most expensive black slate, with cut corners.

This firm also manufactures fireproof metal window and door frames, galvanized iron cornices, skylights, eaves troughs, ridge rolls, metal ceilings, steel roofings, and are jobbers, carrying a full line of tinsers' and roofers' supplies, including a complete stock of assorted metal and composition roofings. Prices and information will gladly be furnished by them on request. Address The W. J. Burton Company, Detroit, Mich.

New Selling Assortment

The success of the first Sharpening Stone Assortments put out has led the Pike Manufacturing Co., of Pike, N. H., to add several new items to the oilstone and scythestone lines. These are smaller than the original assortments and are intended for hardware merchants who wish to carry small but well-assorted stocks of oilstones, scythestones and razor hones. This assortment idea is the outgrowth of over eighty years' experience, which the Pike Manufacturing Co. has had in the manufacture and sale of sharpening stones. They claim that these assortments invariably increase sales on account of the careful selections of stones to meet the needs of all users of edge-tools and the attractive display afforded. The

The Pike Manufacturing Co., have gotten out a new booklet, rightly called "Money Makers," which gives full description and prices of all these different assortments. They will be glad to send this to dealers on request.



WANTED--A RIDER AGENT

IN EACH TOWN

and district to ride
and exhibit a 1908

Model "Ranger" bicycle, furnished by us. Our agents everywhere are making money fast. Write for full particulars and special offer at once.

NO MONEY REQUIRED until you receive and approve of your bicycle. We ship to anyone, anywhere in the U. S. without a cent deposit in advance, **prepay freight**, and allow **TEN DAYS' FREE TRIAL** during which time you may ride the bicycle and put it to any test you wish. If you are then not perfectly satisfied or do not wish to keep the bicycle you may ship it back to us at our expense and **you will not be out one cent**.

FACTORY PRICES We furnish the highest grade bicycles it is possible to make at one small profit above actual factory cost. You save \$10 to \$25 middlemen's profits by buying direct of us and have the manufacturer's guarantee behind your bicycle. **DO NOT BUY** a bicycle or a pair of tires from anyone at any price until you receive our catalogues and learn our unheard of factory prices and remarkable special offers to **rider agents**.

YOU WILL BE ASTONISHED when you receive our beautiful catalogue and study our superb models at the wonderfully low prices we can make for 1908. We sell the highest grade bicycles at less than the manufacturer's factory. We are satisfied with \$1.00 profit above factory cost. **BICYCLE DEALERS**, you can sell our bicycles under your own name plate at double our prices. Orders filled the day received.

SECOND HAND BICYCLES. We do not regularly handle second hand bicycles, but usually have a number on hand taken in trade by our Chicago retail stores. These we clear out promptly at prices ranging from \$3 to \$8 or \$10. Descriptive bargain lists mailed free.

DO NOT WAIT, but write today and we will send you **free** by return mail our **large catalogue**, beautifully illustrated and containing a great fund of interesting matter and useful information; also a **wonderful proposition** on the first sample bicycle going to your town. It only costs a postal to get everything. **Write it now**.

MEAD CYCLE COMPANY **Dept. D-122** **CHICAGO, ILL.**

FLINT-COAT ROOFING

One Ply \$1.35	Two Ply \$1.65	Three Ply \$1.90	Four Ply \$2.20
ROCK ASPHALT ROOFING	ACME RUBBER ROOFING	EVERY ROLL GUARANTEED PERFECT	

Write for Samples and Prices. **BUY DIRECT** You will **SAVE 25 to 50%**

ROCK ASPHALT ROOFING CO., 605 Y. M. C. A. Bldg., CHICAGO

KANSAS CITY SLATE & TILE ROOFING CO.

CONTRACTORS AND WHOLESALE DEALERS IN

ROOFING SLATE AND TILE

Send us your estimates and Write for
CATALOGUE No. 27

2027--2029 Forest Ave., KANSAS CITY, MO.

1,000,000 SOLD

In 1908 will be Our Record

"It's All in Our Blades"

Did
You
Ever
See
A Man
Shave
With a

FRAME

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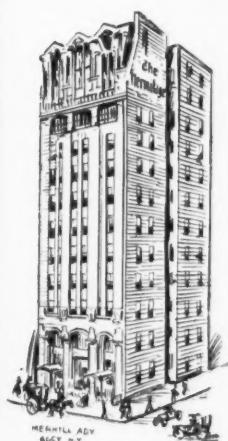
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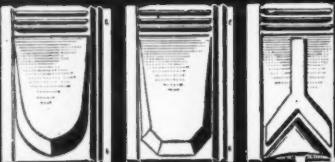
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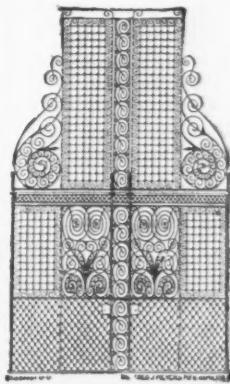
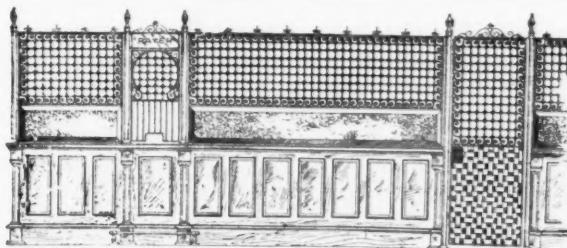
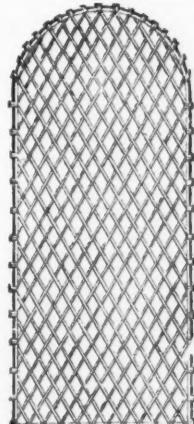
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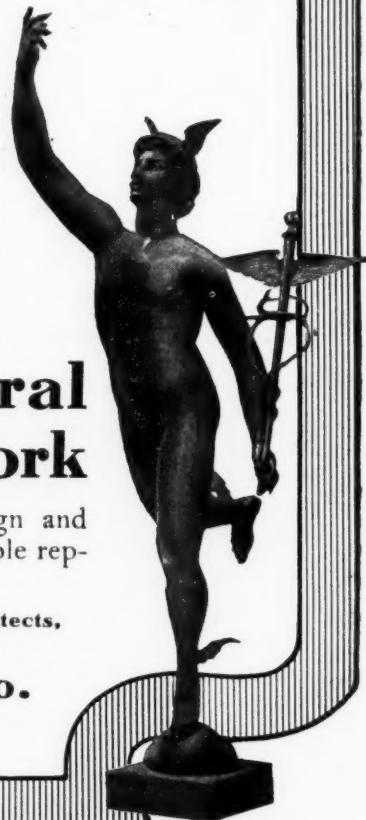
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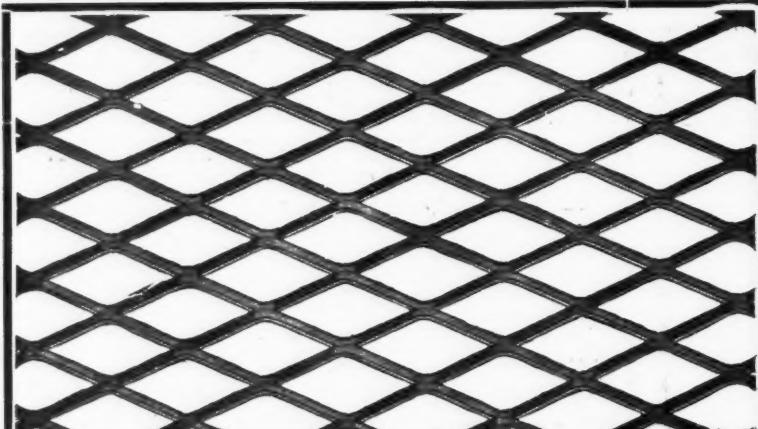
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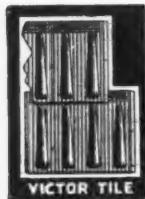
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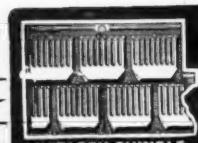
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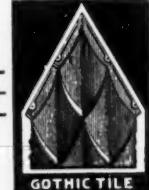
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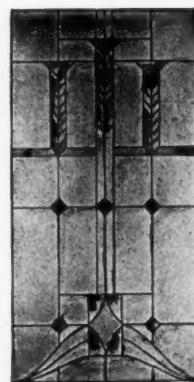


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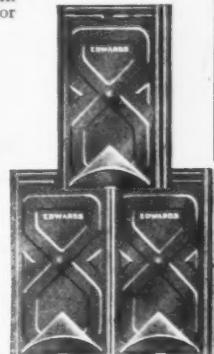
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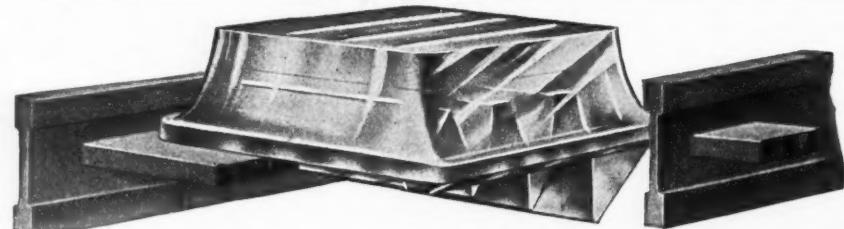
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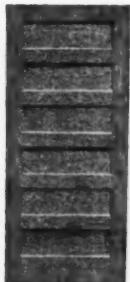
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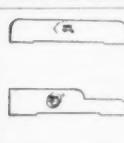
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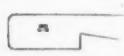


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8096	.33		.92
8095	.42		1.22
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SCHALLER-HOERR'S”

Hot Water Heating At Much Lower Cost

If you contemplate installing Hot Water it will be to your interest to investigate
THE HONEYWELL SYSTEM

It is not only the cheapest system to install, but by far the most slighty, efficient, responsive and economical system on the market. It contains one-third less water and heats one-third quicker with a resultant saving in fuel. The water circulates from the boiler to the radiators from **three to five times faster** than in the old style system, hence quick results from firing with a minimum loss of heat in transmission. No large, unsightly piping through the rooms with this simple system. Owing to the very rapid circulation of the water $\frac{3}{4}$ " pipes are amply large to supply any sized radiator on the upper floors.

Every Radiator heats perfectly with the water at a temperature as low as 85 degrees, which can be increased to a temperature of **240 degrees** (hotter than steam) **without boiling** inside of a **few minutes**, giving the system the efficiency of steam at 10 lbs. pressure to meet extremely cold weather, while retaining all the valuable features of the mild temperatures of hot water.

Over 6000 Systems Installed In 1907

Indorsed and Sold By The Leading Manufacturers of Heating Materials.

Free engineering advice given the trade on all installations.
 Failures absolutely guaranteed against.

If you have an unsatisfactory job of hot water heating, we
 can cure it at a very small cost and without remodeling.

Write us for full information regarding this eminently
 successful system that is revolutionizing hot water heating.



HONEYWELL HEATING SPECIALTY COMPANY

Plant and General Offices

WABASH, = = = INDIANA

The HESS Steel Furnace

is sold direct from our factory to builders, at one small profit. Can be set up by any handy man, from the complete plans and instructions we supply with every equipment.

Send us a rough sketch of what you want to heat and let us tell you what the whole equipment will cost, freight prepaid to your station.

Our No. 45 Leader Steel Furnace heats 7 or 8 rooms. Price \$49.00, freight prepaid to any station east of Omaha, or north of the Ohio. Pipes and registers extra.

FREE BOOKLET. SEND FOR ONE.

Hess Warming & Ventilating Co.
 920 TACOMA BUILDING,
 CHICAGO, ILL.

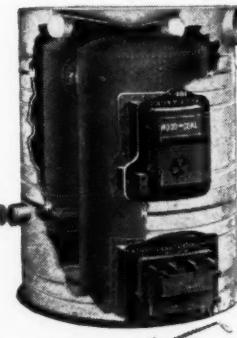
Let Us Send You FREE!

Our Latest "FRONT RANK" FURNACE Catalogue.

It contains valuable heating information—just the thing you want to help you plan and figure on that new house or building you are putting up. *Tell us your needs—we make no charge for furnishing estimates.* Write today, and tell us, please, the name of your local furnace man.

Haynes Langenberg Mfg. Co.

4045-4057 Forest Park Boulevard, ST. LOUIS, MO.



STEEL BEAMS & LINTELS

CALDWELL & DRAKE IRON WORKS
 COLUMBUS, INDIANA.

CAST-IRON
 COLUMNS ·
 SIDEWALK LIGHTS

The Contractors' Signal of Success

LET'S SHAKE HANDS UNDER IT FOR 1908
WE WILL ALWAYS USE YOU RIGHT

CHICAGO MILLWORK SUPPLY CO.
236-242 W. TWENTIETH STREET, CHICAGO



"JUST TO BOOM BUSINESS"

We are naming special bargains on Stock Millwork to start the spring trade. The items here are samples of a few only. Send us your lists for estimates.

OUR GREAT CATALOG No. 15—312 PAGES—IS FREE

We would appreciate 10 cents in coin or stamps to cover cost of mailing.

Contractors and builders owe it to themselves as shrewd business men to **save middle-men's profits** by buying **direct** of the manufacturers. Thousands do—why not you? Buying direct broadens your business experience. **It will pay you to push "stock-stuff."** You don't have to guess what your profits will

be when you buy of us. Our immense warehouse located at Chicago, the "Great Central Market," supplemented by two large factories at the base of supply makes us the **largest manufacturers** of stock millwork **selling direct**. We ship without delays. Begin now. Buy all you can direct. **It will pay.**

50% SAVED OVER DEALER'S PRICES ON **ECONOMY** FLINT COATED ROOFING

SEND FOR FREE SAMPLES

PRICE PER SQUARE OF 108 SQ. FEET

ONE PLY COMPLETE \$1.40

TWO PLY COMPLETE \$1.80

THREE PLY COMPLETE \$2.20

DOORS



THIS DOOR \$1.90
Painted and Glazed, D. S.

This Building is Covered with C. M. S. Co's Economy Flint Coated Roofing



OUR ECONOMY BRAND ROOFING

Is a flexible asphalt fabric. Each roll contains all the nails, metal caps and cement you need in laying it. We fully guarantee every roll, carry a large stock and can ship at once any sized order.

Compare our samples and prices and quality with your local dealers'. Look into it carefully and see that the saving is all we claim. Don't take our word for it. Look it up. Don't put on cheap burr cull shingles at a high price and have your customer kicking. Give him a modern roofing at a fair price that will out-last shingles and cost less.

Net Cost—C-520 Painted

Size	Th'ns	Glazed D. S.	Glazed Cut
2-6 x 6-6	1 1/2	\$1.90	\$2.25

OUR ABSOLUTE GUARANTEE GOES WITH EACH ROLL!

WRITE TODAY

WHAT WEIGHT ROOFING TO USE

1 **ply** is for use on sheds, barns, lean-to sheds, out buildings, etc.

2 **ply** is good for houses, porch roofs, good barns, store buildings and wherever a durable and permanent roof is required.

3 **ply** is extra grade for the man who wants the best and where first cost is no consideration.

MANTELS



THIS MANTEL \$25.50
as described below

Style "C" 2289

DESCRIPTION—Selected oak, gloss finish. Height 6 ft. 1 in., width 4 ft. 4 in. to 5 ft. French bevel plate mirror 16x28 in. Tile opening 36x36 in. Price includes woodwork finish, enamel tile for face and hearth, grate, tile frame, etc., complete ready to set up.

CHICAGO MILLWORK SUPPLY CO., 236-242 W. 20th St., CHICAGO



ROENIUS

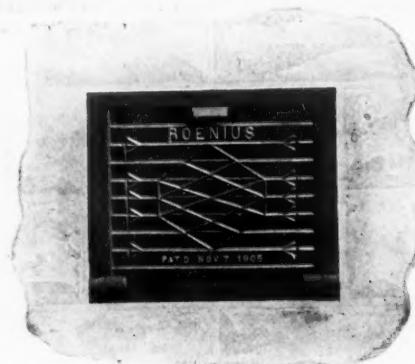
—WOOD and COAL—

CHUTES

10,000
in use



CLOSED AND LOCKED



CLOSED AND LOCKED

Have stood the test, because they are of good, common sense construction. They **do the work and stand the abuse** Coal Chutes are intended for. No adjustable parts, easily opened, easily locked. Notice long anchorage and long spout on both Chutes. Write for agency and prices.

Grand Rapids Foundry Co.
Grand Rapids, Wisconsin

MODELS

Models and Dies for Metal Ceilings.
Machinery for Metal Ceilings and Boats.
Mechanical Installing of Metal Ceiling Plants.
Models for Buildings, Bridges, Theaters and
Railway Stations.
Made of Composition Correct to Scale from
Architect's Plans.
Models and Molds for Concrete Stone.
Models, Stucco and Composition Work.
Make Sketches and Estimates Free of Charge.

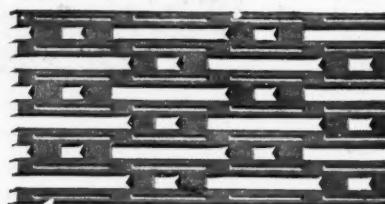
MAIL DIRECT TO THE
ACORN MODELING WORKS
2238 Shelby Street
INDIANAPOLIS, : : INDIANA

CLINCHER LATH MEANS Economy

Easy to Handle
Easy to Erect
Easy to Plaster

Level Plastering
Surface

No sagging between the Studding



Write for sample and price
Dept. C

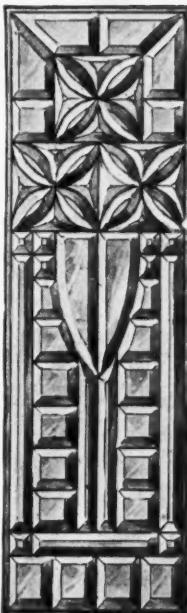
**The AMERICAN
Rolling Mill Co.**
Middletown, Ohio

GLASS

BUY

ART GLASS DIRECT OF THE MAKERS

We design and manufacture our entire product and therefore are in a position to quote the lowest factory figures. Our Catalogue which we furnish **FREE** will help you secure contracts.

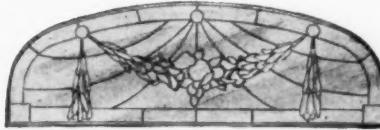


No. 1776

Art
Glass
of
Quality

Write
Us
for
Estimates

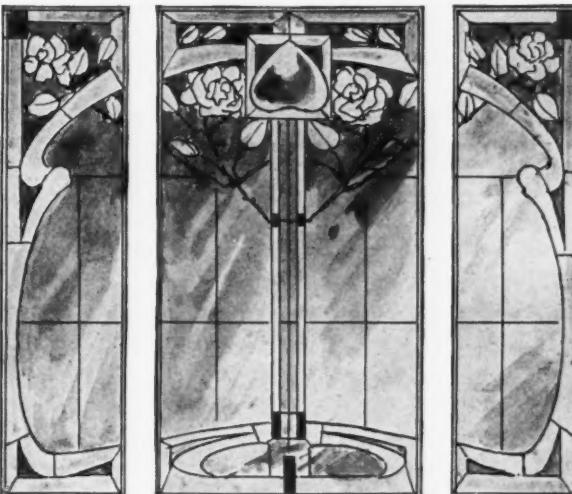
LET US SHOW
YOU HOW TO
SAVE MONEY



No. 1807

OUR DESIGNS
AND PRICES
ARE WINNERS

Decorative Glass of Every Description



No. 1821

Quality
at a
Reasonable
Price

No. 1825



No. 1777

Ours
Are the
Factory
Prices



BEVELED PLATE DESIGNS IN LEAD OR METAL

We make a specialty of suitable designs for Homes, Churches, School Houses and all Public Buildings. Special Designs submitted. If interested in Lamp Shades and Dining Room Domes write for ART Booklet No. 10.

Art Glass, Lamp Shades, Plate Glass, Chipped, Window and Sand Blast Glass

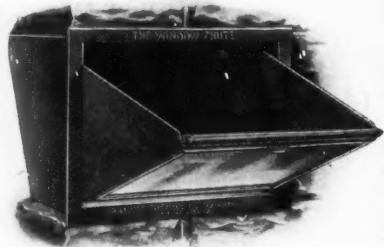
We Ship Short Orders on Sand Blast Designs in 3 to 6 Days

SUÈSS ORNAMENTAL GLASS CO.

740 Throop Street
CHICAGO

"THE WINDOW CHUTE"

A WINDOW AND A COAL CHUTE ALL IN ONE



A Perfect and Unequalled Coal or Vegetable Chute when open.

Window Glass below it from breaking, an extra window frame and sash, which would be necessary for light with any other Chute. The Window Chute is the only combination Chute and Window on the market, which feature is fully protected under United States patent law.

It Is Burglar Proof, for it cannot be opened except from the inside, by lifting sheet off of locking lugs. The Window Chute is made to last, and for practical utility and service has no equal. No more excuse for unsightly, soiled and blackened walls, battered frames and sash, littered walks and grass plots always found where coal and wood are put through a basement window. Equally suitable for frame, brick, stone or concrete walls, and for new or old buildings.

Standard Sizes

Size "A".....	22 wide—16 high.....	25x19
Size "G".....	32 " 24 "	35x27

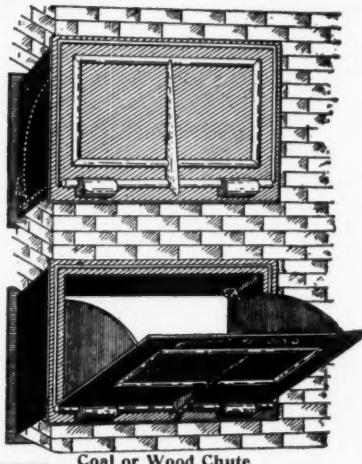
Hopper Opening.

Outside Rim.

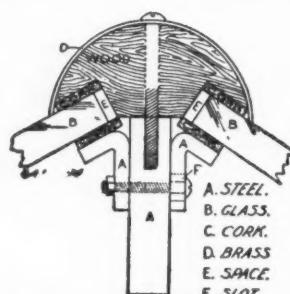
Prices || Just Write

E. W. RITTER & CO., 601 Monadnock Block, Chicago
EDW. MUEHLENBROCK & CO.,
400 N. Main St., St. Louis, Mo.

MANUFACTURED BY
HOLLAND FURNACE CO. HOLLAND,
MICH.



Coal or Wood Chute



All Steel Cork Bedded Corner Post

SHULTZ'S

Patent All Steel, Cork Bedded Corner Posts, Mullions
and Transom Bars.

Also my new Acme Steel Post and Bars, in which
the Glass is Bedded Between Wood.

They are the handsomest and strongest bars made. The glass is bedded on both sides, either between Spanish cork or wood, preventing any cracking or crushing of glass. No putty. Are absolutely water and dust proof.

BURGLAR PROOF COAL CHUTE. Locks itself automatically when closed up. Can only be opened from inside. Face of Chute flush with wall. Write

C. H. SHULTZ, Patentee and
Manufacturer **St. Joseph, Mo.**
For Cut and Prices on Corner Posts and Coal Chutes.



COMPO-BOARD

A substitute for Lath and Plaster. Can be put on by any Carpenter. It is Warmer, more Durable, Quicker and more Easily Applied. Manufactured all 4 ft. wide, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 18 ft. long.

For Sample, Price and full Description, Write

Northwestern Compo-Board Co.
MINNEAPOLIS :: :: :: MINN.

A \$3000 HOME FREE

EVERY man has an ambition to own a home. But it is once in a life-time that an opportunity like this is offered. Here an attractive, beautiful home is held out to you—it is within your grasp.

Own Your Own Home

Thousands and thousands of men and women work and toil for years to save enough money to build a home. It is a most laudable ambition, and one which holds out the greatest possible happiness. For what can a man desire more, particularly if he has a wife and possibly a family, than a comfortable home-like home all his own? It is worth the toil and sacrifice of years, and the reward makes all the effort seem but light.

Realizing this great and praiseworthy ambition, the American Carpenter and Builder decided to place two beautiful homes within the reach of two men who, by their efforts, show that they are most entitled to them.

It will be the work of only a few months to secure one of these homes—it will not take years to save the money. What a short cut for an ambitious and home-loving man!

This is YOUR Opportunity

Don't make the mistake of thinking that this is a good opportunity for some other fellow. It is your opportunity. It may be the other fellow's, too, but it is just as much yours. Aren't you just as capable as he? Aren't you just as ambitious to own a home? Aren't the opportunities in your vicinity just as great as they are in any other? You are mistaken if you think they are not.

Russell H. Conwell, in his famous lecture on "Acres of Diamonds, or, How to Get Rich," says: "Where can

I get rich? Right where you are. At home. Not somewhere else. Not a man has secured great wealth by going away who might not have secured as much if he had stayed at home."

Don't make the mistake of thinking that if you were located somewhere else you would win, but not where you are. Your opportunity is just as good, perhaps even better, than any other man's. Get to work where you are. And get to work right now.

Your Wife's Happiness Assured

Think of the happiness of the wife—that is, or is to be—when you can tell her that hereafter we can live in "Our Own Home." You can give her no greater pleasure in life than the possession of a home all your own. And you can have it, too. And have it this very summer. You don't have to wait and save and figure, and figure and save.

You may have been looking forward to the dim future—to prospect of saving so much a year, and have thought that about year after next, perhaps in 1910, "we will have money enough to build, providing we can take out a mortgage," and then "if we can pay off so much a year in ten years we will have it all paid for."

How different it will be if you grasp this opportunity! Before another snow flies you and your wife and family will gather at

your own fireside, in a home that is all your own. No rent to pay; no interest to pay; no mortgage to lift.

Read our liberal offer very carefully. Then don't lose one minute. Write us before you sleep.

Remember, it is the man who sees and grasps the opportunity that is before him, and is within his reach, who wins.

Two Grand Prizes

FIRST PRIZE—Home valued at \$3,000.00

Including Lumber, Millwork, Hardware, Plumbing, Furnace, Mantels and Paint

SECOND PRIZE—Home valued at \$2,000.00

Including Lumber and Millwork

In case of a tie (which is extremely improbable) the cash value of the prize will be equally divided.

Monthly Prizes

FIRST PRIZE—Cash, \$30.00

SECOND PRIZE—Cash, 25.00

The first home will be given to the person securing the largest number of subscribers to the AMERICAN CARPENTER AND BUILDER before July 1, 1908.

The second home will be given to the person securing the second largest number of subscribers before July 1, 1908.

The first and second monthly cash prizes will be given to the persons securing the first and second largest numbers of subscribers in any one month.

These monthly cash prizes will be duplicated each month.

In addition to all of the above prizes, 25% (50 cents) may be retained by the contestant on each and every subscription secured.

may take only a very few. We want you to fully realize just what the wonderful offer means:

First.—Twenty-five per cent (50 cents) on each subscription.

Second.—\$50.00 a month if you secure the most subscriptions in that month.

Third.—A beautiful and expensive home if you secure the most subscriptions during the contest.

Even if by some possibility you should miss the first home, there is still another; and if you miss the \$50.00 a month you will receive \$25.00 if you get the second largest number of subscribers. You certainly can get the second if you miss the first. But you are not going to miss the first. Don't think that way for one minute. Just go in with a determination to win and you will win. And we will do all we can to help you win.

WRITE TODAY FOR 16-PAGE BOOKLET AND FULL PARTICULARS.

American Carpenter and Builder
185 Jackson Boulevard, Chicago

ASHBY
SCHOOL HOUSES

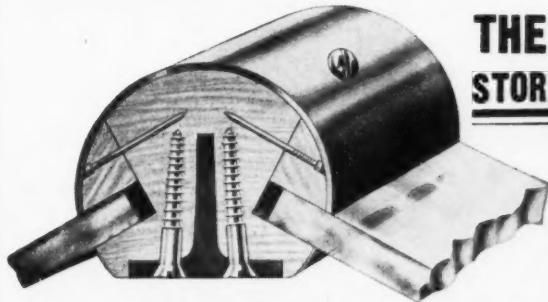
display a composition of utility, durability and good, pure architecture without any "gingerbread."

No buildings are too large or too small for our personal and prompt attention.

We develop your own ideas into a practical set of plans and specifications with which they can be executed to the smallest details into a building that can be built within your means and to your entire satisfaction.

Ashby's Portfolio of School Houses will be sent to parties interested in the erection of a school building for which plans have not yet been procured.

G. W. ASHBY—ARCHITECT
11th Floor, Medinah Bldg.
CHICAGO, ILL.

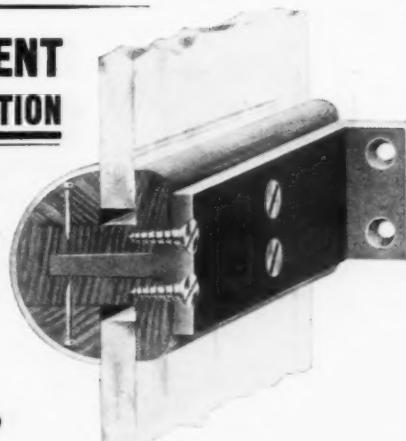


**THE COULSON PATENT
STORE FRONT CONSTRUCTION**

we know to be the best and the only practical construction of its kind
We can convince you of the same if you will write to us for a description and our catalogue "D-800."

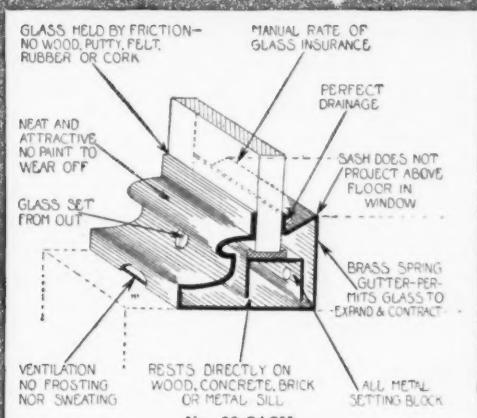
J. W. COULSON & CO.
Sole Owners and Manufacturers

Main Office, 96-98 North Third St., - - - COLUMBUS, OHIO



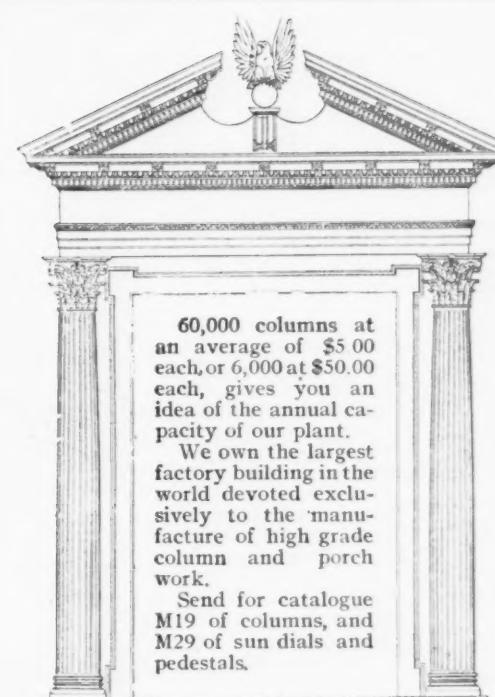
Kawneer System

**of Glass Setting
FOR STORE FRONTS**



M'd under Plym Patents
March 5, '07 May 7, '07 July 16, '07
Others allowed and pending

OFFICES IN ALL PRINCIPAL CITIES
Kawneer Mfg. Co.
121 Factory St., Niles, Mich.



60,000 columns at an average of \$5.00 each, or 6,000 at \$50.00 each, gives you an idea of the annual capacity of our plant.
We own the largest factory building in the world devoted exclusively to the manufacture of high grade column and porch work.
Send for catalogue M19 of columns, and M29 of sun dials and pedestals.

HARTMANN = SANDERS COMPANY
Sole Manufacturers of
KOLL'S PATENT LOCK JOINT COLUMNS
Elston and Webster Aves., CHICAGO, ILL.
Eastern Office, 1123 Broadway, NEW YORK CITY.
The best columns for porch, pergolas or interior use.

UNIVERSAL STORE FRONT CONSTRUCTION



ALL METAL BAR

The first bar made to set glass from the outside! Others follow. All corners and angles look alike. Bar comes fitted ready to screw to building.
WHEN WINDOWS ARE ENCLOSED GLASS WILL NOT FROST.

Our Universal Sash Bar Meets Every Condition of Store Front Construction

Always a sure fitter. Used for Corners, Divisions, Transoms, Mullions, Sills, Jambs, Circles, Domes and any and all angles. Send us your blue prints for estimates. We deliver the goods.

VOLTZ MANUFACTURING COMPANY, St. Joseph, Mo.
1101 and 1103 S. Eighth Street

EVERYTHING IN CEMENT MACHINERY

TO BE in the concrete making business in the Miracle way is to be in it in the most profitable way—the most satisfactory all round. For example, in tile and sewerpipe making—With

MIRACLE SEWERPIPE AND TILE MOLDS

you can start upon a small and inexpensive scale—say \$57.50 for a complete outfit for making 24-inch pipe.

You can make 110 feet of this pipe per day, and when you consider that the first 68 feet you sell pays for the entire equipment you can judge how quickly you will be making clear profit on your outfit.

And you will make Tile that will sell at the same price as burnt clay at about 150 per cent profit.

OUR NEW CATALOG

We have just received our new catalog, which is more complete and attractive than ever before, has over 500 illustrations, pages 9 x 12. We want to place this catalog in the hands of all our cement working friends and while the regular price is 25 cents, if you will tell us what line you are interested in and ask for Catalog K we will be glad to mail it free.

ADDRESS

Miracle Pressed Stone Co.

Largest Manufacturers of
Cement Machinery in the World

Minneapolis, - - - U. S. A.

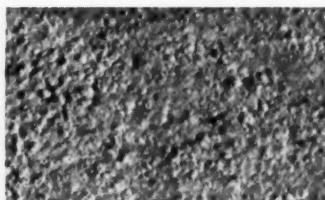
Miracle Concrete is our new little trade magazine, published "when the spirit moves us." Send in your name and we will place it on our complimentary list.



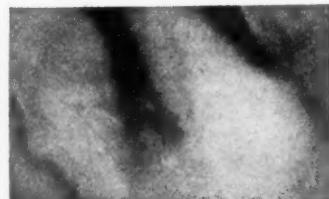
THE
EUREKA
MARBLE-FINISH
PROCESS
FOR

CEMENT BRICK AND CEMENT BLOCKS

WILL PRODUCE A PERFECT
and Indestructible Marble-
Face Finish in White or any
Color or Variations Desired



This cut shows an exact reproduction of a portion of the rough edge of a cement brick made on a cement brick machine.



This cut shows an exact reproduction of a portion of the reverse edge of the same brick, showing mottled marble-face finish produced when brick was moulded by the "Eureka" Formula and Process.

Process for sale in your locality. -- Can be mixed from standard materials easily obtained in your home market without a great expenditure of money. -- Upon request will furnish you samples of these products. Write today.

D. F. SHOPE **Maxwell, Iowa**

THE ONLY MACHINE WITH THE SELF-LOCKING MOLD!

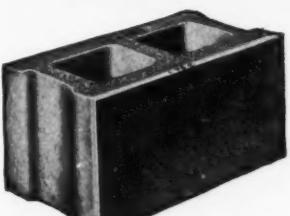
*THE
Brandell*

CONCRETE BLOCK MACHINE

It Makes **MORE** and **BETTER** Blocks
with **LESS LABOR** and **Fewer Motions**



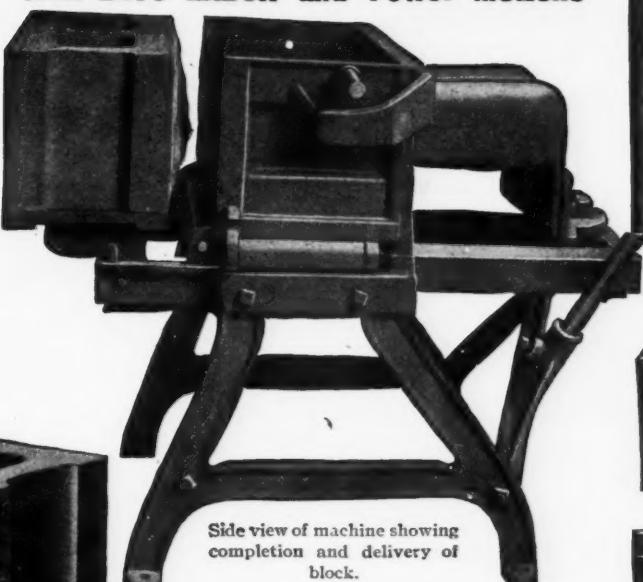
Rock Face Octagon Block



Plain Face Block



Broken
Ashler Face



Side view of machine showing completion and delivery of block.

**ACTUAL
CAPACITY
250 BLOCKS
PER DAY**

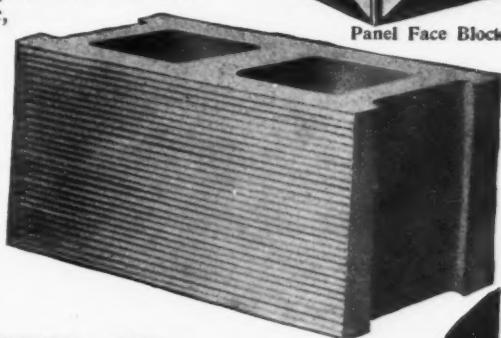
FINE CATALOG
SENT FREE



Rock Face Block



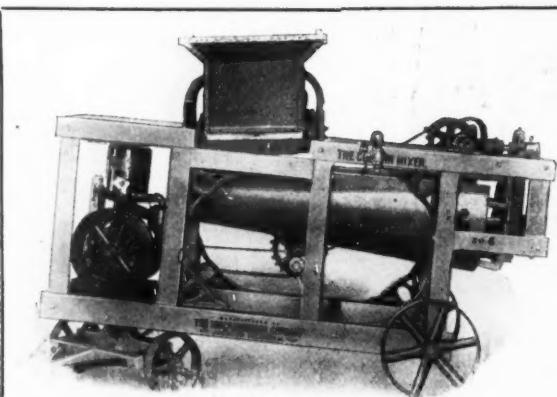
Panel Face Block



THE REASON WHY
On account of its **Self-Locking Mold**, which is patented and not found in any other machine,

the BRANDELL is the fastest operating and most labor-saving concrete block machine on the market. After filling and tamping a saving of 20 to 30 per cent is made in the labor required to discharge the block and prepare the machine ready to mold the next block. The Self-Locking Mold accomplishes this. This saving will make a Brandell pay for itself in a short time. All blocks are made **face down** on the Brandell, by which a clear, sharp impression of the face is obtained and a natural looking stone free from defects is produced. Let us tell you about all the other good points of the Brandell.

BRANDELL CONCRETE BLOCK MACH. CO.
Cor. Madison and Dearborn Sts. **CHICAGO, ILL., U. S. A.**



"The Coltrin Mixer is a Pippin"

WATERTOWN, S. DAKOTA, Nov. 5, 1907.

Mr. NILS ERICKSON,
MINNEAPOLIS, MINN.

DEAR SIR:

The Coltrin Mixer we bought of you is a pippin. Does all anyone can ask for. Will mix the concrete in fine shape as fast as ten men can wheel it away. Anyone wanting a mixer cannot beat the Coltrin.

Yours truly,
WESTERN CEMENT CONST. CO.

THE COLTRIN CONCRETE MIXER

Mfgd. Exclusively By

THE KNICKERBOCKER COMPANY
JACKSON, MICHIGAN

Bricklaying Taught by Practical Bricklayer



In Two to Three Months

Begin now. Bricklayers are in big demand. As we teach bricklaying exclusively we turn out the most expert mechanics. Individual Instructions. You start right in with the tools and learn how to lay brick.

Write for Circular

CHICAGO SCHOOL OF PRACTICAL BRICKLAYING
Henry T. Kies, Prop. 2115-17 W. Adams St., Chicago

Carpenters and Contractors

Send us a list of your requirements and get our Special Figures on SASH, DOORS and all building material. Prompt Delivery and YOU save the dealers' profit.

Eureka Supply Co.

4300 N. 21st Street, ST. LOUIS, MO.



The 1908 Leader Advance Concrete Mixer

The talk of the Chicago and Buffalo Cement Shows

"HIGH UP AND LOW DOWN"

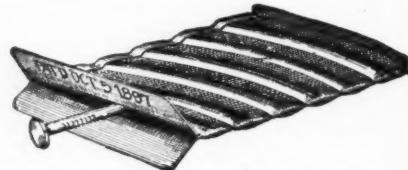
High rear wheels 42" in diameter; front wheels 30" in diameter
(Can move it around very easily.)
Low hoppers, only 3' 6" from the ground.
Has positive and accurate stoker feed for all materials.
(Proportions from 1 to 2, to 1 to 10.)
The Advance is continuous in operation and continuous in satisfaction.
(Its advantages solve the mixing problem.)
Furnished with Plenty of Power.
Saves Labor, Material, and Expense. Write for Booklet "A"

ADVANCE CONCRETE MIXER CO.
JACKSON, MICHIGAN

Rutty Steel Wall Plugs

HOLDS NAIL WITH A GRIP OF STEEL
The best nailing base for interior finish

Reliable
Permanent
Economical
Fire Proof



The Rutty Wall Plug has never proved defective or deficient in the qualities we claim for it

Our Catalog Shows Complete Line.

WRITE FOR IT.

J. B. PRESCOTT & SON

WEBSTER Tracy Avenue MASS.

ABOUT PLANS

ARE YOU GOING TO BUILD RIGHT?

Then send for my new portfolio of designs, plans and complete instructions and guide for home builders—two books in one—"CLAUSEN'S PLANS AND PROBLEMS SOLVED." Price, 50c.

This book contains 142 designs and plans of original homes, beautiful fireplaces, attractive entrances, picturesque windows, and groups of windows, stairways, kitchen and pantry arrangements, sideboards, etc., with complete instructions on the planning and designing of all parts of the home. THE ONLY COMPLETE BOOK of the kind published, containing extensive articles solving every problem that would confront the home builder. Also send for my booklet of practical suggestions, "Just a Word About Plans," and ask about my Free Water Color Sketch Offer.



Complete plans of this,
my most popular house
for \$10.00.

Studio, 605-7-9 Lumber Exchange,
MINNEAPOLIS, MINN.

ARTHUR C. CLAUSEN, Architect.



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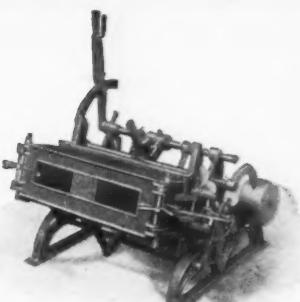
The

RUNYAN

The Latest—The Simplest—The Best

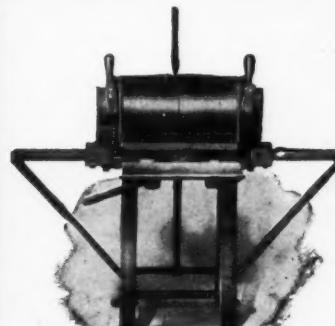
The ONLY successful Mechanical Combination of THREE machines in ONE. Side-face and Down-face Block Machine and Brick Machine.

Only ONE width pallet necessary on which to make ALL the standard widths of blocks: this saves to the purchaser at least two-thirds of the money necessary to be spent for pallets with other machines to accomplish the same results.



DOWN FACE

No Advertising Deception, But a Genuine Reality



The Runyan Jr.

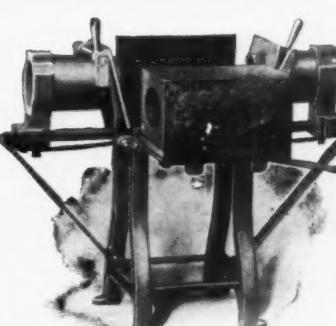
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RUNYAN, Jr.

The ONLY block machine having a LONGITUDINAL-HORIZONTAL CORE: PATENTED. The block made on this machine is endorsed by Architects, Builders, Contractors, and Government Experts; will revolutionize building operations; \$125.00 buys the complete machine and 100 iron pallets; on these pallets can be made, 100-8" blocks and 100-10" blocks.

OUR AUTOMATIC TAMPER will revolutionize tamping; every blockmaker can use one—ask about it. Our combination screen and MIXER does the work of SIX men—ask about it too.

The Runyan Concrete Machinery Company
Canal Dover, Ohio



The Runyan Jr.

Standard Concrete Machinery



Made in 4 sizes—5, 10, 20 and 40.

THE STANDARD CEMENT BRICK MACHINE

Is the fastest Hand Brick Machine on the Market; will make plain, veneered and ornamental face and shape; all perfect, smooth brick, true to size and design.

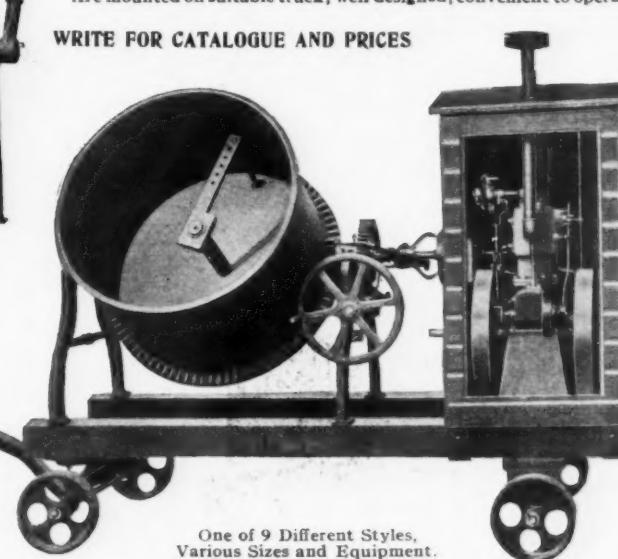
THE STANDARD CONCRETE MIXER

Handles wet or dry mix; requires little power to operate; mixes batch perfectly in one minute; self-cleaning; easily charged and dumped: 3 sizes.

THE STANDARD PORTABLE MIXER and ENGINE

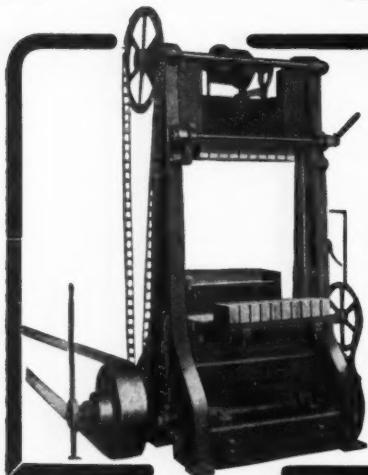
Are mounted on suitable truck; well designed; convenient to operate.

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One of 9 Different Styles,
Various Sizes and Equipment.

South Bend Machine Mfg. Co., 1802 Franklin Street,
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20,000 Cement Brick per Day

A Complete Power Plant

INCLUDING

MACHINE - MIXER - POWER - PALLETS - SIFTER
 STEEL RACK - CARS - STEEL TRACKS - ELEVATOR
 Everything, in Fact, That Makes an Up - to - Date Modern Brick Plant

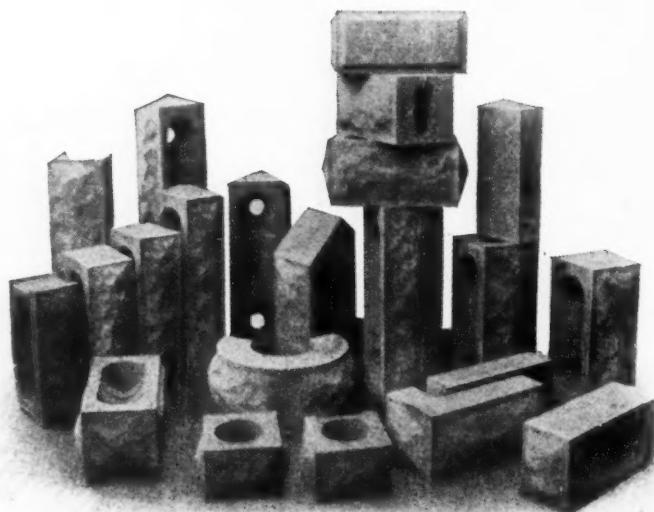
Our Price for a plant of its completeness and capacity **Is the Wonder of All**

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Cement Block and Brick Machinery Company
 823 Majestic Bldg., DETROIT, MICH.

Largest Profit Earner Operated

The Sanford Block Machine IS THE FASTEST IN THE FIELD



EASY TO OPERATE || **Has Every Up-To-Date Feature**
TO MAINTAIN

An Actual Pressure of from 13,000 to 16,800 pounds on every block made.

Every part of the machine is adjustable. Wooden pallets may be used. It makes ALL sizes and designs of blocks.

It makes 300 to 400 veneered hollow blocks, and 400 to 500 veneered slab blocks, in an 8-hour day.

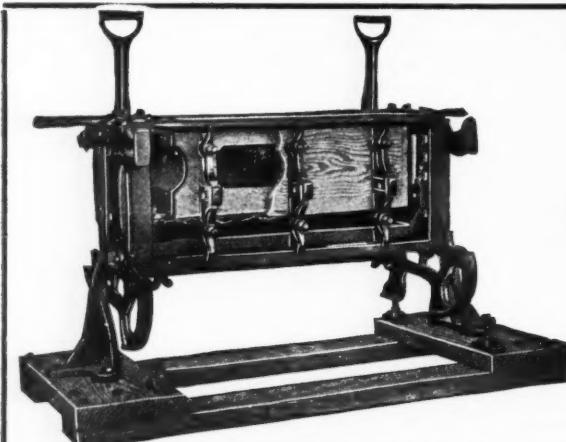
AN ILLUSTRATED CIRCULAR FREE showing the various sizes and styles of blocks

THE SANFORD CONCRETE MACHINE CO.

1645-1646-1647 Nicholas Building

TOLEDO :: :: OHIO

Ask for Information Regarding Mixers and Cars



The Improved "MILES" No. 2

**The
Machine**

that makes TRUE, WET CONCRETE STONE
 that makes BLOCK of ANY ANGLE
 with MOVABLE END GATES
 that is demonstrated before you buy
 that makes the GREATEST RANGE of Work
 that makes you want another just like it

The same principle has operated successfully for five years and is fully covered by our patents. VERTICAL CORES. Meet us at Buffalo Convention. Get Our 1908 Catalog.

THE P. B. MILES MANUFACTURING CO. Inc.
 109 W. Cortland Street, Jackson, Mich.

THE USE OF WET MATERIAL
combined with
GREAT SPEED OF OPERATION
is what every cement worker has
wanted. It is found in only one
machine.

THE BESSER FACE DOWN

The only block machine which withdraws the cores vertically and automatically. Every block perfect. None sag. Adjustable instantly for all lengths, widths and heights. Designs and shapes unlimited. One size pallet. Fewer movements. Less tamping. Less cement. Water-proof blocks. Bigger profits. The first perfect block machine. We make perfect block, brick, mixing machines of all kinds, and at all prices. Brick machines with capacity up to 15,000 per day.

We are specialists in

Cement Tile Machinery

which offers 100% profits.

Our Automatic Tamper Tile Machine

makes drain tile for \$8.00 per M, which sell for \$15.00 to \$20.00. Capacity 2,000 to 10,000 tile per day. Work easy. Machine simple and everlasting.

Our Tile Molds,

in all sizes up to 48", will pay for themselves in a day. Besser has machines for every purpose. They are in use everywhere and give you all the profits. We prove every claim by our customers.

Send for free literature and 25 cents for big Catalogue and instruction book.

THE BESSER MFG. CO.

Alpena, Michigan

Makers of the most Complete Line of Concrete Machinery



Eureka Face Down Machine

LOOK AT THIS

HY-LO 16" Block Machine \$16.50
HY-LO 24" Block Machine \$25.00
Champion Block Machine \$30.00
OHIO 16" Block Machine \$50.00
OHIO 24" Block Machine \$75.00
Springfield Block Machine \$95.00
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Don't Buy until you get our catalog. It will save you money. Catalog FREE

A BOOK OF CEMENT HOUSE PLANS: Ten cents in Silver or Stamps.

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Box 142, Springfield, Ohio.



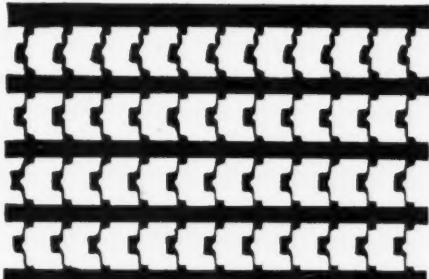
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LIGHTNING Block Machine

Makes 400 or More Concrete Blocks Per Day
Automatic Self Locking Doors

The cleanest, quickest and simplest machine on the market. All working parts protected from dropping cement. The price is the most interesting thing about it—suits everybody.

Write for Illustrated Circular
Detrick Concrete Machine Co.
14 and 16 South Canal St.
Dayton, Ohio



Write for full information and practical suggestions

RIB-LATH and RIB STUDS

Meet the requirements of every practical builder

Descriptive Catalog will be sent on request.

Also sample of RIB-LATH if you will state why you are interested.

Trussed Concrete Steel Company
624 Trussed Concrete Building, DETROIT, MICH.

Simplicity } in **THE X-L CONCRETE STONE MACHINE** is { Efficient
Practicability Economical

Guaranteed to Equal in Efficiency any Four Other Make of Machines and
Saves 20 to 50 per cent in the Construction of "Dry Walls."

A NEW AND EXCLUSIVE FEATURE. INTERCHANGEABLE AND INTERMIXABLE PLATES.

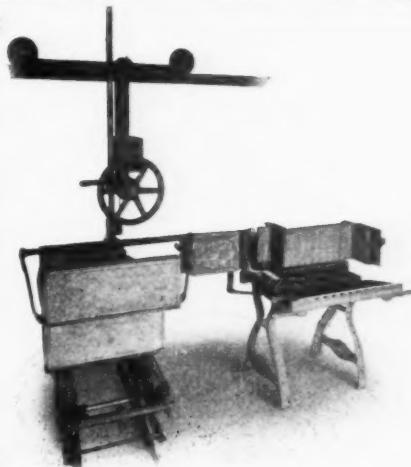
Increase the efficiency of the machine ten-fold over the solid hinged plate type of machines.

Bear in Mind you don't require five or six different size machines when using an X-L Machine.

Porch Piers and Ornamental Blocks in almost endless varieties can be made. These are the Stepping Stones to Success in the concrete block business.

LET ME TELL YOU HOW WE DO IT
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THE X-L CONCRETE STONE MACHINE CO.
110-112 West 18th St. - - - KANSAS CITY, MO.



HERCULES
SPECIAL

Concrete Block Machine

And Complete Outfit, for only . . . \$120



Made of Hercules Blocks

Hercules Regular Block Machine

The Hercules is known as the real concrete block maker.

With this simply constructed machine you can make real concrete blocks, ranging in size from two inches to six feet in length. Besides perfect blocks, you can make water tables, sills, lintels and steps.

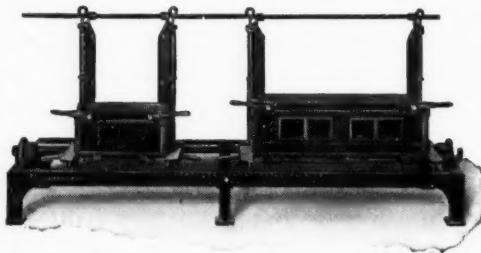
The Hercules is built so strongly and so mechanically perfect that it never gets out of order, and can always be depended upon at critical times to properly perform its duty.

CONCRETE MIXER

The Hercules Concrete Mixer not only mixes properly and thoroughly, but proportions thoroughly—it is a wonderful machine. The best for Sidewalk Work. Send for particulars.

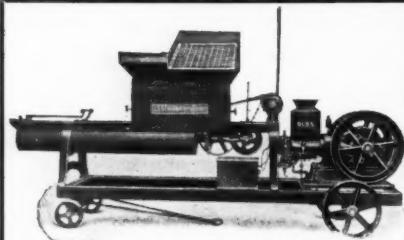
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We manufacture tools for Cement Workers that are better than the ordinary. Ask for Tool Catalogue —It's Free.



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The U. S. Standard Concrete Mixer

CLAIMS

1. To mix as well as the best.
2. To divide the different ingredients more reliably into any desired proportion.
3. To measure the ingredients more accurately than any known mixer.

The U. S. Standard Cement Block Machine Claims Superiority

1. For accuracy and perfection in construction.
2. For adaptability to an almost endless variety of blocks.
3. For strength and beauty of blocks.
4. For speed.
5. For moderation in price.

Manufactured by

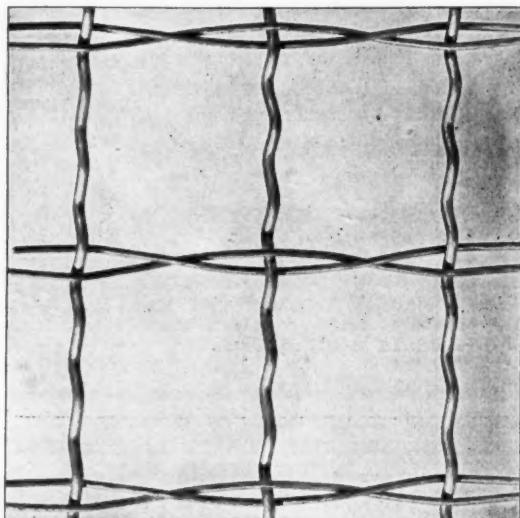
**THE ASHLAND STEEL
RANGE & MFG. CO.**

Ashland, Ohio

Catalogue A sent free upon application.



See our exhibit
at National Cement
Users Convention,
Buffalo, January
20-25.



CABLED WIRE

Concrete Reinforcement

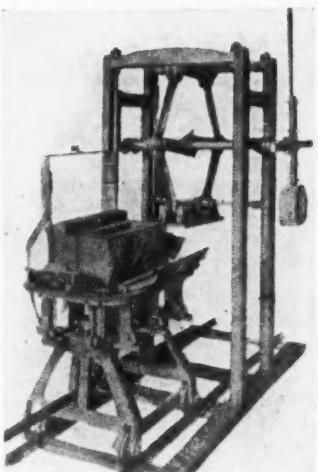
Thoroughly Galvanized, High Carbon, Steel Wire, Great Tensile Strength, is Elastic and conforms to any surface readily. Saves 15% to 20% in labor.

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Cor. Antoine and Atwater Sts. DETROIT, MICH.

“SOMERS” PRESSURE Block Machines



Chief Features are

The enormous pressure of 30 tons which creates a Dense, Compact Block and

Our Guarantee

That 3 men can make two perfect blocks per minute on this machine, and by adding two molds its capacity can be doubled.

Fully described in illustrated catalog.

SOMERS BROS., Mfrs.
URBANA, ILLINOIS

Three Reasons Why You Should Buy The King Cement Brick Machine

It Has a Larger Capacity
Makes a Better Quality of Brick
And Is a Greater Labor Saver

—Than Machines which Cost Twice as Much

OUR PRICE \$40.00

There are no cracked or defective brick, because they do not have to be turned over to remove them from the machine.

3000 brick a day, 300 per hour, is the average capacity when operated by two men.

It makes rock face and plain face in any color.

You will be satisfied with the King Cement Brick Machine. You can prove its worth for yourself on the machine in your own town.

15 days free trial to give
That's fair, isn't it?
Send for Illustrated Catalog



**W. E. DUNN
& CO.**

341 Grand Ave.
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Pier, Column and Chimney Molds

Artistic, Rock Face and other designs, all sizes.
10 x 10.....\$3.50
12 x 12.....4.00
16 x 16.....5.00
Catalog explains them.

Acme Cement Block Machine

Equals any Machine, at any Price

\$40.00 Complete Outfit
8 x 8 x 16

Makes block face down. Any size from 8x8x16 to 12x12x24. All on same frame with substitution of plates. Wood or iron pallets. Dry, medium, or wet mix

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COLGAN MACHINERY & SUPPLY CO.
2052 Parsons Avenue : : COLUMBUS, OHIO

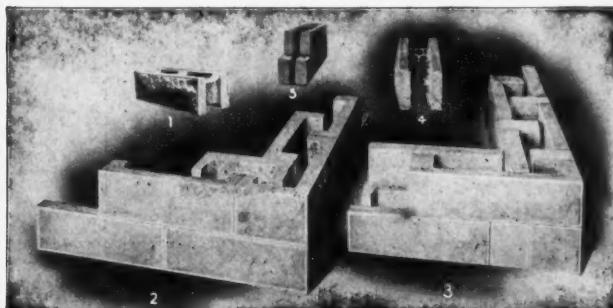


It's damp proof

A TWO-PIECE wall with a 2-inch continuous air space, bonded with metal ties. No water-proofing ever needed. Plaster (skin-coat) directly on inner wall—no furring or lathing.

The Edmondson Block Machine makes these blocks of any size up to 4x8x16 inches. Some makers average 750 blocks a day. The most satisfactory and profitable block machine yet devised. Write us about it.

Edmondson Concrete Machinery Co.
1543 Williams St. SOUTH BEND, IND., U. S. A.



Down Face

MADE ON THE FRANCISCO
Coarse Material

Wet Process

THE FRANCISCO ADJUSTABLE CONCRETE BLOCK MACHINE

builds all of the walls shown in cut, down face, wet process, coarse material, with no extra expense, with the exception of cores for wall No. 3 and No. 4, using the same pallettes for all five walls. You also make on our No. 4 machine the 32 inch block, 24, 20, 16, and fractional block, using the same pallettes, also, all of your long stone to 5 feet, the 8, 10, 12 inch block for width of wall, with no extra expense for parts or face plates. The machine is adjustable to any fraction of an inch in width to 20 inches, in length to 5 feet, in height to 16 inches, which enables you to build your entire building on the one machine. Send for new catalog "G."

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FRANCISCO BLOCK MACHINE CO.
338 North High Street - COLUMBUS, OHIO



NOXALL

THE WATERLOO
CEMENT
SHINGLE MACHINE

Noxall Competitors and Theories
Our machine makes a shingle on a commercial basis. You can make money with it.
Just drop us a card for full information and catalog N.

**WATERLOO CONCRETE
ROOFING COMPANY**
Waterloo, Iowa

Wet Process Concrete Blocks

By the Pettyjohn System

The manufacturing of Concrete Blocks is rapidly nearing perfection, but the up-to-date manufacturer must use modern machinery and employ improved methods. Three features are important in perfect block making:

WET PROCESS

These splendid features are combined in the new Pettyjohn Invincible Machine, and no other. Made in three lengths, 16-inch, 24-inch and 40-inch. Tandem Invincible makes two blocks at once. Price \$65 and up. Single Invincibles, \$35 and up. Sold on trial always, guaranteed to give satisfaction or money refunded.

With our TRIPLE TIER RACKING SYSTEM green blocks can be stacked three high direct from machine with inexpensive home-made rigging. This economizes space, reduces off-bearing distance, and above all insures slow, even, damp, perfect curing and bleaching. Plans and blue prints free to customers.

Send for our latest edition of "Stone Making" (just published), a book of valuable data for the block maker—FREE.

THE PETTYJOHN COMPANY, - - - - 634 No. Sixth St., Terre Haute, Ind.

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DAMP CURING

THE HAYDEN AUTOMATIC BLOCK MACHINE CO.

112 W. Broad St., Columbus, Ohio

Manufacturers of High Grade

Concrete Block Machines, Mixers,
Stone Crushers, Etc.

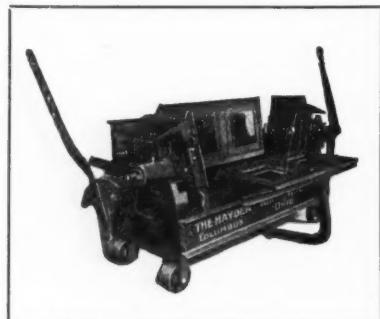
The Most Simple and Effective Mechanical
Principles Embodied in this Mixer

POINTS OF SUPERIORITY IN THE
HAYDEN MACHINE—Great Strength, Lim-
itless Range, Rapidity, Ease of Operation,
Simplicity of Construction.

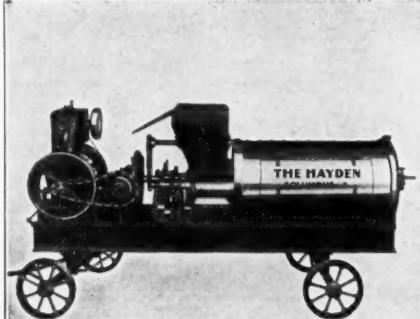
The only Block Machine on the market strong enough to
withstand the heavy strain of pneumatic tamping.

BUY A HAYDEN FOR RESULTS

Send for Catalogue M Today
Eastern and Foreign Sales Agent, H. W. Remington,
19 South St., New York City



The Hayden Down Face Machine.



The Hayden Improved Mixer.

"BRADFORD PRESSED BRICK" "BRADFORD REDS"

Trade-Mark—Sept. 12, 1905—July 15, 1907



Size 2 $\frac{1}{2}$ "x4"x8 $\frac{1}{4}$ "

Positively Unequalled for Richness of Color
Perfection of Shading and Uniformity of Size

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Bradford Pressed Brick Company
BRADFORD, PA.

Standards, Romans, Moulded and Ornamentals
Selected Brick for Mantels

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Smith Machine Co., H. B.
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Whitney, Baxter D.

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NOTICE TO ADVERTISERS

New copy, changes and corrections for advertisements must reach office of American Carpenter and Builder, 185 Jackson Boulevard, Chicago, not later than April 20 in order to insure insertion in the May number.

Combination INDIA OILSTONE

Size
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GRITS

CARPENTERS
This Is the Best All Round

**Oilstone
On the Market**

WHY?

Because, —The India Oilstone is made by a special process which makes it sharp and quick cutting.

Because, —They are the Most Durable.

Because, —Each Stone is Guaranteed.

Secure one from your dealer. Take no substitute. If your dealer does not keep the India Line, we will gladly tell you where you can get it. Send for Booklet on Oilstones showing other shapes.

Sole Selling Agents, Dept. 6

**PIKE MFG. CO., Pike, N. H.
NORTON CO., Worcester, Mass., Manufacturers**

Sanitary Metal Tile

ARTISTIC, DURABLE
ECONOMICAL, NONCORROSIVE

For
**Walls and Ceilings
of Bath Rooms,
Kitchens,
Lavatories,
Stores,
Hospitals, etc.**

More durable than Clay Tile.
No blow can break it. Germ Proof, Water Proof. Design and colors equal to the most artistic ceramics.

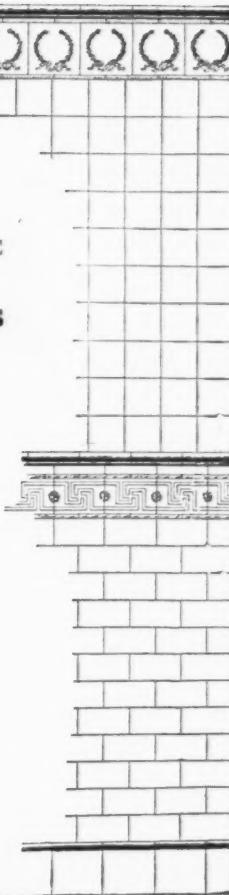
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No Nails Being Used.

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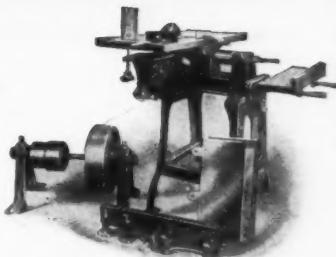
Agencies in all principal cities
Will for catalogue



Front View of Combination Jointer

Something New

The picture of our new Combination Saw Table and Jointer hardly does justice to this machine which we have designed especially to meet the requirements of contractors and builders. Five machines are combined in one, and it is really surprising what a great variety of work it can do. We have made a very reasonable price on this machine and will be glad to quote you and send further details with a large picture of it which will show more clearly the details of construction.

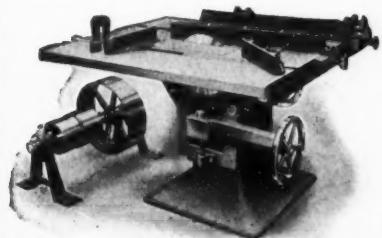


Back View of Combination Jointer

We also make "the famous

DEFIANCE line of Woodworking Machinery

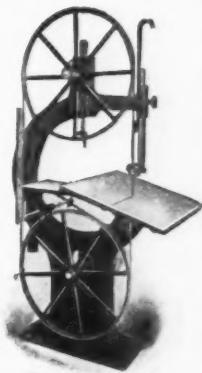
We have exclusive representation in all of the largest Cities in the United States: : : : :



consisting of BAND SAWS, SAWABLES, JOINTERS, SWING and CUT OFF SAWS, TURNING LATHES, PLANERS, SAW ARBORS and MANDRELS. Also special heads, rip and cut-off gauges.

Write us for free catalogue to-day.
When writing mention this paper.

The Sidney Tool Co.
SIDNEY, OHIO



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Know Lowest Millwork Prices And You Will Get the Good Contracts!

Carpenters and Contractors

Despite the great circulation of the American Carpenter and Builder, there are only a few carpenters and contractors in each neighborhood who take this publication, and consequently, there are few who are familiar with Gordon, Van Tine Co.'s lowest millwork prices. Our field men who travel all over the country report to us that very often they meet with contractors who seem to be the only ones in their trade, in their locality, who study the American Carpenter & Builder closely, with the result that they have an easy way to get jobs in their vicinity, since by having Gordon, Van Tine's Monthly Bargain Bulletin, together with Gordon, Van Tine's Grand Free Millwork Catalog, they can underbid on any job that they compete for and still make a big margin of profit.

It is very evident that the carpenter or contractor who has all kinds of building material prices right at his fingers' ends can out-talk and outbid the competitor who has to consult with the lumber dealer on every little job—who has to get the lumber dealer to order from his wholesaler or from his mill at special order prices, subject to delay.

Furthermore,---

The carpenter who has the benefit of Gordon, Van Tine Co.'s booklet on roofing, on floors, on interior finish; of their Grand Free Millwork Catalog, of their very helpful Book of Plans (10 cents for postage) has a great advantage over the rival who can offer the customer no professional service, but simply follow the dictates and desires of the customer without being able to intelligently co-operate with him and help him and direct his buying as well as his building.

Every reader of this publication should be on the mailing list of Gordon, Van Tine Co. and should write for their Grand Free Millwork Catalog and get the Special Bargain Bulletins that are issued from time to time.

For instance, did you get Gordon, Van Tine's special information about making a snug sum of money out of Screen Windows—how to build them and how to buy the lumber stock to be used in them without any waste of material?

Read Gordon, Van Tine Co.'s advertisements on this page every month. They will make you money.

Yours very truly,

Gordon, Van Tine Co.
DAVENPORT, IOWA

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SCREEN DOORS
at Our Prices
are Money-Makers
for Carpenters
and Contractors

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Stained Cherry, $1\frac{1}{2}$ Inches
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3- 0x7- 0 **1.07**

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Tells How to Make Screens from
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